DOCUMENT RESUME

ED 438 751 HE 032 637

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TITLE	Study of the Supply of and Demand for Doctoral Degree Recipients in Maryland.
INSTITUTION	Maryland State Higher Education Commission, Annapolis.
REPORT NO	MSHEC-RES-1999-13
PUB DATE	1999-11-00
NOTE	191p.
AVAILABLE FROM	Maryland Higher Education Commission, 16 Francis Street, Annapolis, Maryland 21401.
PUB TYPE	Numerical/Quantitative Data (110) -- Tests/Questionnaires (160)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Admission (School); Blacks; Comparative Analysis; *Doctoral Degrees; *Doctoral Programs; Employment Patterns; *Enrollment Trends; *Graduate Study; Higher Education; Labor Market; Minority Groups; Tables (Data); Trend Analysis
IDENTIFIERS	African Americans; *Maryland

ABSTRACT

Concerns about the proliferation of doctoral programs and too many Ph.D.s prompted this study of supply and demand for doctoral graduates in Maryland. This report examines trends in the applications and admissions of doctoral students and the number of doctoral enrollments and degrees awarded. Enrollment and degree information is presented by campus and program, and is analyzed by race, gender, citizenship, and residency, and in comparison with national data. In reviewing demand, the study surveyed the postgraduation employment status of nearly all doctoral degree recipients in Maryland between 1992-96. The report also contains results of interviews with academic affairs personnel, and concludes with policy questions related to statewide higher education planning. Highlights of the study include the following: doctoral enrollments have fallen from 1994 to 1998, with part-time students accounting for nearly all the decline; women account for 46 percent of doctoral students, and minority students for 15 percent (with African Americans accounting for 8 percent); 31 percent were foreign students; and 88 percent of doctoral degree recipients reported full-time employment (38 percent were working in Maryland) and less than 2 percent were unemployed. Fifty-four data tables are included, as well as two appendixes--trends in degrees awarded by program and by school, and the questionnaire. (CH)

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MARYLAND HIGHER EDUCATION COMMISSION

ED 438 751

Study of the Supply of and Demand for Doctoral Degree Recipients in Maryland

November, 1999

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EXECUTIVE SUMMARY

Concerns about the proliferation of doctoral programs and the overproduction of Ph.D. recipients prompted the Maryland Higher Education Commission to conduct a study of the supply of and demand for doctoral graduates in Maryland. This issue has relevance in a state where one-third of the four-year institutions currently award this degree in at least some programs.

In addressing supply, this report examines trends in the applications and admissions of doctoral students and the number of doctoral enrollments and degrees awarded. The enrollment and degree information is presented by campus and program and analyzed on the basis of gender, race, citizenship and residency. National statistics about degrees earned are presented. In reviewing demand, the study describes the results of a survey about the postgraduation employment status of all doctoral degree recipients between 1992 and 1996 from campuses representing nearly all of the Ph.D recipients in Maryland. The report also contains the results of interviews with academic affairs personnel at five doctoral-granting campuses in the State. The study concludes with policy questions related to statewide higher education planning.

Highlights of the study:

Supply of Doctoral Degree Recipients

- Doctoral enrollments in Maryland have steadily fallen to 7,196 in 1998 since they peaked in 1994 at 7,561. Part-time students explain nearly all of the decline.

- Women make up nearly half (46 percent) of all doctoral students at Maryland campuses, and minority students represent 15 percent of the doctoral enrollment (African Americans constitute 8 percent).

- Nearly one-third (31 percent) of all doctoral students at Maryland campuses in 1998 were foreign students--a record high. Nearly two-thirds of the doctoral enrollment at the public campuses came from outside the State.

- Nearly 1,000 doctorates were awarded by Maryland institutions in 1998--the largest in the State's history. This represented a 42 percent increase from 10 years ago. The number of Ph.Ds earned in the State has steadily climbed since 1995.

- Women earned 43 percent of the doctorates at Maryland campuses in 1998, a figure which has changed little during the past 10 years.

- Minorities earned 11 percent of the doctorates in Maryland in 1998, with African Americans attaining 4 percent. The proportion of doctoral degrees awarded to minorities has fluctuated over the last 10 years.

- Thirty percent of the doctorates awarded at Maryland campuses in 1998 went to students from other countries, representing an increase from 10 years ago when foreign nationals represented 23 percent of degrees earned.

- More than three-fourths of the doctorates awarded at Maryland campuses in 1998 were in six academic programs: biological sciences, engineering, health professions, education, social sciences, and physical sciences.

- There has been solid growth in the number of doctorates awarded during the past 10 years in engineering (78 percent), the biological sciences (71 percent), the physical sciences (62 percent) and the health professions (61 percent).

- Foreign students received a majority (57 percent) of the engineering doctorates at Maryland campuses in 1998, 37 percent of those in the physical sciences, 30 percent in the health professions, and one-fourth in both the biological and social sciences.

Demand for Doctoral Degree Recipients

- A substantial majority (88 percent) of the 1,337 doctoral degree recipients who responded to the survey reported that they held full-time employment, and less than 2 percent were unemployed.

- Of the graduates employed full-time, 38 percent were working in Maryland. Less than half (43 percent) held a job in postsecondary education. Approximately one-third were employed in business or government.

- Thirty percent of the graduates with full-time jobs were employed as educators.

- The median annual salary of graduates with full-time employment was slightly over $56,000. The highest salaries were earned by graduates in computer science and engineering; the lowest in fine arts, letters (humanities) and the biological sciences.

- A substantial majority (84 percent) rated their doctoral studies as excellent or good in the way it had prepared them for their current job. Just 3 percent deemed their preparation to be inadequate.

- More than two-thirds of the graduates reported that their job was directly related to their major. However, 37 percent of those with a full-time job indicated that they did not need a doctorate to obtain their current position.

- Seventy percent said that they would major in the same doctoral field again, while 11 percent indicated that they would not. The remainder were uncertain.

- Nearly two-thirds of the doctoral graduates who were Maryland residents at the time they enrolled in their program continued to live in the State, while more than one-fourth of those who were out-of-state residents at the time of matriculation stayed in the State.

- Most (53 percent) of the fully-employed graduates who were Maryland residents at the time they enrolled were working in the State, while nearly one-quarter (23 percent) of those who lived outside the State at matriculation held jobs in Maryland.

- Asked to name the changes in their doctoral education that would have better prepared them for employment, the largest number of graduates cited greater mentoring and help from the faculty and more teaching experience.

INTRODUCTION

During the past few years, there have been numerous articles in both scholarly journals and the popular press warning about the overproduction of doctoral degree recipients at U.S. colleges and universities. Those cautioning about this "Ph.D. glut" point to the state of the academic job market, which has been tight for most of the 1990s. Competition for available permanent faculty appointments has been keen. Reductions in the growth of federal spending for research and development and state support for higher education has had an adverse effect on hiring. Institutions have responded by employing more part-time and "temporary" full-time faculty with no hope of tenure in order to conserve money. This has resulted in a two-tiered class structure in many academic departments, characterized by a secure cadre of older, tenured professors and a younger band of instructors who resemble academic gypsies as they move from one temporary position to another.

There are serious policy consequences related to the production of Ph.Ds for both students and society if an excessive number are released into the workforce. For students, seeking a doctorate represents a sizable investment of time and financial sacrifice. The median number of years that it took 1997 doctoral recipients nationwide to earn their degree was 10.5 after the baccalaureate. Seven of these years were spent on the doctorate alone, and the median age of graduates was slightly over 34. More than one-third of the 1997 doctoral graduates reported that their personal or family resources represented the main source of financing their studies, and nearly half had some level of educational indebtedness at the time they completed their degree. Students are justified in expecting that they will be pleased with their job situation after such an enormous endeavor. For society, Ph.D production is an important ingredient in the rising cost of higher education. Undergraduate tuition is used to finance graduation education at most campuses. Hence, if there is overproduction of doctoral students, it is being funded at the expense of undergraduates and their parents.

Concerns about the proliferation of doctoral programs in the State and the possible flooding of the labor market with too many Ph.Ds prompted the Maryland Higher Education Commission to undertake a study of the supply of and demand for doctoral graduates in Maryland. This issue has policy relevance in Maryland, where one-third of the four-year institutions (11) currently award this degree in at least some programs. These include:

- Two research universities: University of Maryland College Park (UMCP) and The Johns Hopkins University
- Two doctorate universities: University of Maryland Baltimore (UMB) and University of Maryland Baltimore County (UMBC)

- Four comprehensive institutions: Morgan State University, University of Baltimore, Loyola College, and University of Maryland Eastern Shore (UMES)
- Three religious institutions: Baltimore Hebrew University, Ner Israel Rabbinical College, and St. Mary's Seminary and University.

In addition, three institutions (Bowie State University, Towson University, and University of Maryland University College) recently had mission statements approved by the Commission that authorizes the development of applied or professional doctorates in selected disciplines.

In addressing supply, this report examines five-year patterns in the number of applications to doctoral programs in major fields at each of the four largest Ph.D granting institutions in the State, those accepted for admission, and the number of new enrollments. The report also looks at 10-year trends, by campus and by major program, in the number of doctoral enrollments and doctorates awarded. The enrollment and degree information is analyzed on the basis of gender, race, citizenship, and (for public campuses) residency. Comparisons are made between the number of doctorates awarded in Maryland and those nationwide. National statistics about degrees earned were drawn from the National Science Foundation's 1999 report, *Doctorate Recipients from United States Universities.*

In reviewing demand, the study examines the results of a survey of all doctoral graduates between 1992 and 1996 from five Maryland campuses representing more than 99 percent of the Ph.D recipients in the State: UMCP, Johns Hopkins, UMB, UMBC and Morgan. Graduates received the questionnaire between one and five years after earning their degree. The survey, which was conducted by the Commission in collaboration with these institutions, provided information about the current employment situation of the graduates. For those with full-time jobs, there was an analysis of the location of their employment, the type of employer with whom they are working, their specific occupation, their median annual salary, their perception of how well their job prepared them for their job and whether a doctoral degree was needed for it, the relationship between their job and field of study, and whether they would choose the same doctoral field again. Breakdowns by each of the five class years, campus, program, gender and race are included.

In conducting the study, the Commission staff interviewed a variety of academic affairs personnel at UMCP, Johns Hopkins, UMB, UMBC, and Morgan. These included chief academic officers, deans responsible for graduate programs, faculty, and other staff. These sessions were enlightening, and the observations made are integrated into this report. The study concludes with policy questions related to statewide higher education planning.

SUPPLY OF DOCTORAL DEGREE RECIPIENTS

The Maryland Higher Education Commission collects unit record data about the enrollment of students attending doctoral programs in the State as well as the degrees awarded to graduates. Information about applicants, those accepted for admission, and the new enrollees in each year were supplied by all of the campuses for which these figures were requested, except Morgan.

Applications, Acceptances, and New Enrollments

Tables 1 to 4 display trends in the number of applications, acceptances and new enrollments in doctoral programs at UMB, UMBC, UMCP and Johns Hopkins for the most recent five year period for which figures were available at each institution. Department-level statistics were combined into major disciplines for the purpose of analysis. At UMB, applications, acceptances and new enrollments were generally up in the biological sciences and health professions, which represent the bulk of the institution's doctoral programs. Programs at UMBC generally showed signs of becoming more selective in recent years. The acceptance rate was flat or declining in the past five years in all programs except the physical sciences--and in that area, the increase in acceptances was far less than the jump in applications. A similar pattern emerged at UMCP, where acceptances and new enrollments were down even though applications rose in many disciplines. The only exceptions were increases in the number of doctoral students admitted in computer science and letters (the humanities). The number of applications in several disciplines at UMCP have been declining: the biological sciences, business, mathematics, the physical sciences, and psychology. At Johns Hopkins, the acceptance rate of Ph.D students remained constant or increased in all departments except the biological sciences. In mathematics and the social sciences, the number of doctoral students who were admitted grew even though there was a decline in applications. There also were drops in applications at Johns Hopkins in letters and the physical sciences.

Trends in Enrollment by Type of Campus

Doctoral enrollments in Maryland peaked in 1994 at 7,561 (Table 5). Since that year, the number of students in doctoral programs in the State has steadily fallen to 7,196 or by 5 percent. However, nearly all of the decline came in part-time enrollments which were down by 12 percent. There were just 33 fewer full-time doctoral students at Maryland campuses in 1998 than in 1994.

These trends were most evident at the State's public colleges and universities, where UMCP represented 78 percent of the doctoral enrollment in 1998. Since 1993, the number of students in doctoral programs fell from 5,106 to 4,790 or by 6 percent. Part-time students represented the bulk of the decline, dropping 12 percent. There were just 37 fewer full-time doctoral students. In contrast, doctoral enrollments were more steady at the independent campuses, where Johns Hopkins constituted 95 percent of the student population. Total enrollments declined by 4 percent between 1994 and 1998, with all of the drop attributed to part-time students.

The proportion which women make up of all doctoral students at Maryland campuses has increased gradually during the past 10 years from 43 percent to 46 percent (Table 6). Most of this increase has come at the independent campuses, where the percentage of women has risen from 40 percent to 47 percent since 1989. There has been little change the distribution of men and women in doctoral programs at the public campuses.

There has been steady growth in the proportion which racial/ethnic minorities constitute of all doctoral students in Maryland over the past 10 years, from 9 percent in 1989 to 14 percent in 1998 (Table 7). The percentage of African Americans in the doctoral student pool also has risen from 5 to 7 percent during this period. While there have been increases in minority representation at both the public and independent campuses, most of these students choose to enroll at a public campus. Minority students made up 15 percent of the doctoral enrollment at Maryland public campuses in 1998, and African Americans 8 percent. At the independent institutions, minorities constituted 10 percent of all doctoral students and African Americans represented just 3 percent.

Nearly one-third (31 percent) of all doctoral students at Maryland colleges and universities in 1998 were foreign residents--the highest figure in the history of the State (Table 8). Ten years ago, 27 percent of the doctoral enrollment was foreign. There was little difference between the proportion of foreign nationals in doctoral programs in the State's public (32 percent) and independent (30 percent) campuses in 1998.

There has been a steady increase over the past 10 years in the proportion of out-of-state doctoral students at Maryland public campuses (Table 9). Nearly two-thirds (66 percent) of the doctoral enrollment at these institutions in 1998 came from outside Maryland, a record high, compared to 59 percent in 1989. Similar figures are not available for independent institutions.

Trends in Enrollment by Program

Six programs represented nearly three-fourths of the total enrollment in doctoral programs in Maryland in 1998: biological sciences (16 percent), engineering (15 percent), social sciences (12 percent), health professions (11 percent), education (10 percent), and physical sciences (8 percent). More than 90 percent of the enrollments reflect these disciplines plus computer science, letters, psychology, mathematics, and fine arts (Table 10).

There has been considerable difference in the enrollment fortunes of the largest programs during the past 10 years. The number of students taking doctoral study in the health professions has soared 43 percent, and enrollments in the biological sciences and engineering have each leaped by 34 percent. In contrast, there were 29 percent fewer education doctoral students in 1998 than in 1989 and 15 percent fewer students in the physical sciences. Doctoral enrollment in the social sciences rose by 8 percent during the 10-year period.

Women constituted a substantial segment of the doctoral enrollment in education (72 percent) and the health professions (65 percent) in Maryland in 1998 (Table 11). Women also made up a majority (51 percent) of the doctoral students in the biological sciences, and 43 percent of those in the social sciences. Women had a far lower share of the doctoral enrollments in the physical sciences (25 percent) and engineering (21 percent). However, the percentage which women represented of the doctoral students in each of these fields has risen since 1989.

Racial/ethnic minorities made up 28 percent of the doctoral enrollment in education in 1998, and African Americans constituted 22 percent of all Maryland Ph.D students in this field (Table 12). Indeed, 35 percent of African American doctoral students in 1998 were in education as were 21 percent of all minority doctoral students. Minorities experienced increases from 10 years ago in their representation among doctoral students in the health professions (14 percent), the biological sciences (13 percent), the social sciences (12 percent), engineering (11 percent), and the physical sciences (6 percent). The proportion of social science doctoral enrollments represented by African Americans more than doubled during this period from 4 percent to 9 percent. African Americans experienced small increases in the proportion which they constituted of doctoral students in the health professions (5 percent), biological sciences (3 percent), and engineering (3 percent), but there was no change in the physical sciences (1 percent).

Foreign students made up a majority (53 percent) of the doctoral enrollments in engineering in Maryland in 1998 and nearly half of those (48 percent) in the physical sciences (Table 13). At least one quarter of the students enrolled for doctoral study in Maryland in 1998 in the biological sciences (29 percent), the health professions (27 percent), and the social sciences (25 percent) were from other countries. However, few education majors (5 percent) were foreign students. There was either modest or no change in the foreign enrollment in doctoral programs in Maryland during the past 10 years, except in the physical sciences where 38 percent of the students were from outside of the United States in 1989.

An overwhelming majority of the 1998 doctoral students in the physical sciences (87 percent) and engineering (80 percent) at Maryland public campuses were from out-of-state (Table 14). More than 60 percent of those enrolled in the biological sciences (66 percent), the health professions (64 percent), and the social sciences (61 percent) also were non residents. Of the academic programs with the greatest concentration of doctoral students, only education had a majority of Maryland residents (62 percent).

However, the proportion of education doctoral students from Maryland has fallen from 72 percent in 1989.

Trends in Degrees Awarded by Type of Campus

Nearly 1,000 doctorates were awarded by Maryland colleges and universities in 1998, the largest number in the history of the State (Table 15). This figure represents a 42 percent increase over the doctoral production in Maryland 10 years ago. The number of Ph.Ds earned in the State has steadily increased since 1995. Slightly more than 600 doctorates were awarded at Maryland public campuses in 1998, with 78 percent of them at UMCP. The number of doctorates attained at public campuses actually peaked in 1994 at 638. Nearly 400 doctoral degrees were earned in the independent sector in 1998--all but seven at Johns Hopkins. This figure represented the largest number of Ph.Ds ever awarded by Maryland's independent institutions.

Women earned 43 percent of the doctorates at Maryland campuses in 1998 (Table 16). There has been little change during the past 10 years in the proportion of women receiving doctoral degrees in the State. At the public four years campuses, the percentage which women constituted of all doctoral recipients slipped from 45 percent to 44 percent since 1989, while it increased from 37 percent to 42 percent during the same period at the independent institutions.

Eleven percent of the doctorates awarded at Maryland colleges and universities in 1998 went to racial/ethnic minorities, and 4 percent (or 42) were earned by African Americans (Table 17). At the public campuses, 12 percent of the doctoral degrees were received by minorities and 5 percent by African Americans. At the independent institutions, minorities were responsible for 10 percent of the doctorates and African Americans for 3 percent. Statewide, the proportion of doctoral degrees awarded to minorities in general and African Americans in specific has fluctuated within a fairly narrow range. However, the number of doctorates earned by African Americans at the State's public colleges and universities in 1998 (29) was the second lowest in the past 10 years, although it reached a record high at the independent campuses (13). In addition, the proportion of doctorates earned by all minorities at the independent institutions has achieved its highest levels during the past three years.

Representatives from all of the campuses expressed a strong commitment to recruiting and retaining minorities at the doctoral level but acknowledged that it is a difficult undertaking because of the limited supply of minority students and the tremendous competition for them. UMCP's academic vice president said that his institution was "not satisfied with its current level of enrollment of minorities." He blamed decisions by federal appeals courts, particularly the Podhersky case, as being the biggest impediment to UMCP's efforts. "We had an African American postdoctoral program that was very successful but had to be dropped because of the decision," he said. The associate dean in the school of engineering at Johns Hopkins stressed that the institution was "working very hard to attract minority students into the Ph.D. program, but it is slow progress. Anytime we can graduate even a handful of African American PhDs in engineering, we have made a huge dent in the national statistics because of the small number of African American doctorate recipients in this field nationally." Johns Hopkins' staff indicated that the University's most effective technique for recruiting minorities has been the establishment of long-term partnerships with undergraduate institutions, which can serve as "feeders." UMBC's graduate school dean indicated that his institution is expanding the graduate Meyerhoff program which provides minority fellowships. UMB's associate dean for graduate studies cited a number of actions the institution has taken including participating in an exchange of promising minority undergraduates, encouraging qualified students to apply for UMB's McNair Scholars program, and offering a Program Enrichment Scholarship aimed at diversifying programs.

Thirty percent of the doctorates awarded at Maryland colleges and universities in 1998 went to foreign nationals (Table 18). This represented an increase from 10 years ago, when 23 percent of doctoral degrees were earned by foreign students, but it was below the peak years of 1994 and 1996 when a full third of all doctorates were received by citizens of other countries. Foreign students have earned a greater percentage of the doctoral degrees at Maryland public colleges and universities than at independent institutions, but the trend has been similar at both types of campuses.

The campus representatives insisted that doctoral graduates from other countries contribute to Maryland's economy as well as boost the image of the State and its higher education institutions worldwide. "Maryland is getting a lot of benefit because these students are engaged in teaching and research while they are here," a UMBC faculty member said. "A large number are going to get green cards and contribute to the workforce in underserved areas." This person stressed that the impact on Maryland taxpayers may not be as great because many foreign students finance their own education or are supported by their government. The view also was expressed that there is value to Maryland even when students return to their own countries. "Anytime that you can train students and send them back to their country and that country moves up from 'third world' status, we get a benefit," one of the associate deans of research at Johns Hopkins noted. "It is good for Maryland to have a reputation for producing graduates that contribute to the benefit of the world." Added a staff member from UMCP: "We have trained thousands of students who have taken leadership positions in their own countries, contributing to good international relations. These people have positive impressions of the United States. UMCP's staff also stressed that the world economy mandates an open system, noting "We need to embrace a global intellectual market. Education is international, and we would be badly served if we adopted a policy of exclusion. It would cut us off from important scientific and technological ties." It also was noted that the loss of foreign faculty in high technology fields would hurt the State.

Trends in Degrees Awarded by Program

As would be expected, doctoral degrees were concentrated in the same academic programs in which enrollments were the highest (Table 19). More than three fourths of the doctorates awarded at Maryland colleges and universities in 1998 came in six disciplines: biological sciences (16 percent), engineering (15 percent), health professions (13 percent), education (11 percent), social sciences (11 percent), and physical sciences (10 percent). These fields, plus fine arts, mathematics, psychology, letters and computer science, accounted for 92 percent of all doctorates awarded in the State. There have been solid increases in the number of doctoral degrees awarded during the past 10 years in Maryland in engineering (78 percent), the biological sciences (71 percent), the physical sciences (62 percent), and the health professions (61 percent). The number of social science doctorates have also grown by 39 percent. However, there has been a decline of 15 percent in education. Tables displaying trends in the number of doctorates awarded in specific programs at each Maryland college and university is in Appendix A.

Women constituted a strong majority of the 1998 doctoral degree recipients in education (74 percent) and the health professions (65%) at Maryland campuses (Table 20). Forty percent of doctorates in the social sciences and 46 percent of those in the biological sciences went to women. However, women received only 18 percent of the doctorates in the physical sciences and 14 percent of those in engineering. While there was an increase in the proportion of women receiving doctorates in most disciplines during the past 10 years, the percentages actually fell slightly in the health professions and more dramatically in the physical sciences (from 28 percent in 1989).

Seventeen percent of all education doctorates at Maryland campuses in 1998 were earned by racial/ethnic minorities, and 14 percent by African Americans (Table 21). Indeed, more than one-third (36 percent) of all doctorates attained by African Americans were in education. Sixteen percent of the health professional doctorates went to minorities, 11 percent of those in engineering, 10 percent in the biological sciences, 6 percent in the physical sciences, and 5 percent in the social sciences. However, African Americans accounted for 5 percent or less of the doctoral degrees earned in these disciplines. Indeed, only 16 African Americans received a doctorate in engineering from a Maryland institution in the past 10 years and only 11 in any of the physical sciences. While the proportion which minorities represent of doctoral degree recipients has risen in the biological sciences, engineering, and the health professions since 1989, it has fallen in the social and physical sciences and in education.

Foreign students earned a majority (57 percent) of the engineering doctorates at Maryland colleges and universities in 1998 (Table 22). Nationals from other countries also received 37 percent of the doctorates in the physical sciences, 30 percent of those in the health professions, and a quarter of the degrees in both the biological and social sciences. However, just 7 percent of the doctorates in education went to citizens from abroad. Except for the physical sciences, all of these disciplines experienced an increase during the past 10 years in the proportion of foreign students who attained a doctorate at Maryland institutions.

DEMAND FOR DOCTORAL DEGREE RECIPIENTS

Doctoral degree production is at an all-time high nationally as well in Maryland. In 1997, a record number of 42,705 doctorates were awarded at U.S. colleges and universities (Table 23). Since 1991, the number of doctoral degree recipients in the country has risen by 14 percent. Over the longer term, the figures are even greater. Since 1980, there has been an increase of 36 percent in doctorates earned and, since 1970, a jump of 45 percent. Maryland campuses have been considerably more prolific. Between 1991 and 1997, doctoral awards rose 18 percent. Since 1980, the number of newly minted Ph.Ds in Maryland soared by 66 percent and, since 1970, by 72 percent. The extent to which Maryland has outpaced the nation in doctorates awarded also is reflected when comparing the figures on the basis of program, gender, race/ethnicity and citizenship (Tables 24 and 25).

Despite this surge, which was spurred in part by predictions in the late 1980s of unprecedented demand for Ph.D graduates in faculty positions, there has been considerable pessimism among degree recipients about prospects of finding a job in an academic setting. The percentage of new doctoral degree recipients with definite plans to work in higher education has declined over the past 30 years and is near its record low. The weaknesses of the academic job market also may be reflected in the steady increase during the past 20 years in the proportion of new doctoral degree recipients who accepted postdoctoral appointments. While universities are the main employers of Ph.Ds, fewer than half of the new doctoral degree recipients today are finding a permanent position in an academic environment, compared with two-thirds of job seekers 30 years ago.

Publicity about an oversupply of Ph.D. graduates and declining demand has led to calls for the elimination of doctoral programs and reductions in the enrollment of Ph.D students. Indeed, some doctoral-granting universities have bucked the conventional wisdom that a larger program is more prestigious and that competition among students for financial aid is healthy. Some schools have cut the size of their programs and have offered greater support to the smaller number of students who enroll. In scaling back its Ph.D. programs, Washington University in St. Louis is both recruiting more selectively and providing every student with full financial support for six years.

However, Washington University's approach has been in the distinct minority, and strong disagreement has been expressed in many academic quarters about the necessity, desirability and even ethics of plugging the pipeline of doctoral degree recipients. Three major points have been advanced to defend the current production levels of Ph.Ds.

First, it is argued that restraints are *unnecessary* because past efforts to make long-term predictions about the state of the labor market have been unsuccessful. In response to the Sputnik launch, U.S. policymakers in the late 1950s established programs that increased substantially the number of doctoral degree recipients, particularly scientists--leading to a surplus of Ph.Ds by the early 1970s and fierce competition for jobs. In the late 1980s, the anticipated retirements of large number of academics led to forecasts of severe shortages of faculty by the end of the 1990s. This did not occur. The end of the Cold War and resulting cuts in military spending, the economic recession of the early 1990s, the decision by financially-pressed campuses to replace retiring faculty with part-timers if at all, the elimination of mandatory retirement, an influx of foreign academics, and the cancellation of the superconducting supercollider combined to frustrate the prediction.

Today, there are two divergent views on the future job market for new Ph.Ds. One paints a rosy picture of the U.S. economy's ability to absorb new graduates, especially in high technology fields. The other is a pessimistic forecast that contends that there will be a weak employment outlook for doctoral graduates for the foreseeable future because of the overproduction of Ph.Ds. At least one will be wrong--but which one? The representatives from Maryland's research universities and other doctoral-granting campuses split in their perspective. Staff from UMB, UMBC and Morgan were optimistic as long as more than academic jobs were being considered. Those from UMCP and Johns Hopkins felt that opportunities for employment fluctuate with market demand for certain disciplines, are cyclical, and are tied to the availability of research dollars.

Second, it is contended that cutbacks in doctoral production is not *desirable* because the academic job market is not the only show in town. Today, fewer doctoral graduates are following the career paths of their academic advisers--tenured professors. A large percentage of Ph.Ds, especially those in science, math and engineering, are obtaining employment in industry and government. According to the National Science Foundation, less than half of all doctoral recipients in high technology fields were employed at a four-year college or university. In most fields today, the percentage of Ph.Ds working outside academe is rising. Companies and government agencies are attracted by the skills of doctoral graduates in problem solving and critical thinking as well as their ability to work independently.

If a doctorate is seen as a passport to a broad range of jobs, it can be argued that the question is not whether there are too many Ph.Ds. Rather, it is whether these graduates are educated to fit workforce needs. As more Ph.Ds secure jobs in business and government, some believe that doctoral programs should reflect the job market and prepare graduates better for career opportunities in non-academic settings. The campus representatives interviewed for this study reported that their graduate programs and faculty are responding this trend by increasing the breadth of student skills, making the curricula more multi-disciplinary, and encouraging student interaction with industry.

One of the associate research deans from Johns Hopkins noted that some students take business courses along with their doctorates. "It is a practical response to the real world," she said. "Industry is asking for versatility; therefore, graduate programs are becoming more interdisciplinary." UMBC's graduate dean said that there is a substantial flow between the private sector and academe at his institution. "Every dissertation committee has at least one outside member, and that person is frequently a Ph.D who works in government or industry," he said. UMCP's academic vice president noted the graduate council at his university has approved a program in which a doctoral student can earn a master's degree in a second discipline simultaneously. "Many companies want graduates who are technically skilled and multi-disciplinary," he said. "The market will drive the curricula." UMB's associate dean for graduate studies indicated that her institution has added a job search skills component to the curriculum. "If you couple this skills development with information of where the jobs are, you are best serving students," she said. Morgan's academic vice president said that doctoral programs at her institution are specifically tailored to prepare students for business and government.

Third, *ethical objections* have been raised to placing restrictions on the enrollment of doctoral students. Admissions caps, it is said, would prevent students from seeking a career in a subject which they enjoy and want to make their life's work. Linking doctoral degree production to models of supply and demand, which may not be accurate, deny students their right of free choice, this argument goes. If a student wants to earn a doctorate in a field in which the job prospects are challenging, he or she should be allowed to do it. Further, some academicians have argued that a Ph.D. has intrinsic value outside of employment.

All of the campus representatives interviewed concurred with the philosophy that there is intellectual benefit to obtaining a doctorate that goes beyond preparation for the job market. Said one of Johns Hopkins' associate deans for research: "Regardless of the position you obtain, you will bring the training you received with you: critical thinking and analytical skills, communication skills, hypothesis testing." Added Morgan's academic vice president: "Education is preparation for life not just for a job. In going through the educational process, students develop skills that are transportable and can be applied in various circumstances. We should prepare our students more broadly and help them to develop critical thinking skills that make them more adaptable."

The representatives of Maryland campuses interviewed for this study did not believe that elimination of programs or reductions in enrollment were valid solutions. They argued that unemployment is very low for doctoral degree recipients in their programs, especially in health care, science, and high technology areas. They also noted that many Ph.D. graduates are going outside academe. "Many of our graduates move to high tech and government positions that are research-oriented rather than academically oriented," UMBC's graduate school dean observed. "The majority of the people in our program come from government agencies and 'think tanks,' and they intend to continue in their jobs." He noted that some students are "raided" from their programs by industry before they complete their degrees. UMCP's academic vice president stressed the freedom of choice issue, saying "It would be a shame to turn away those who want to get a Ph.D. because they enjoy the field." But he stressed that institutions should inform students about their likely job prospects, with the understanding that it is difficult to predict labor market trends. Morgan's academic vice president noted that there is no "glut" of African American Ph.Ds.

Whether cuts in doctoral enrollments and degrees are justified in part reflect the realities of the marketplace. To make an educated decision about this matter, it is necessary to be aware of the success of newly-minted Ph.D graduates in finding employment that fits their expectations. Further, it is useful to know the sectors of the economy in which these jobs are available. Hence, the outcomes of doctoral study are an important guide to college administrators in making enrollment management decisions as well as judgments about the type of education that is provided. This was the purpose for the survey that was conducted as part of this study.

Survey Methodology and Characteristics of Respondents

A private contractor hired by the Commission mailed standard questionnaires in June 1998 to all doctoral degree recipients from UMB, UMCP, Morgan and Johns Hopkins for each of the five academic years between 1991-1992 and 1995-1996. UMBC conducted a separate survey of graduate degree recipients from its institution for these same years which included identically worded questions for the vast majority of those on the common instrument. Follow-up mailings were sent to non respondents from all campuses by the institutions. The participating institutions provided the Commission with demographic information about each graduate which was matched to returned questionnaires. UMBC supplied the Commission electronically with the responses of the doctoral degree recipients to the common questions in the survey as well as demographic data, and these were combined with the results from the other campuses in a common file. Of the 2,858 graduates for whom mailing addresses were provided to the Commission and thus included in the survey, usable returns were received from 1,337 for a response rate of 47 percent. A copy of the questionnaire is in Appendix B.

Tables 26 to 29 compare the survey respondents to all doctoral degree recipients from the participating campuses in the years of the study on the following attributes: the university attended, major academic program, gender, and (for the public institutions) race/ethnicity.

The distribution of survey participants by campus and academic program was close to the actual breakdown of all doctoral graduates in most respects. The respondent group contained slightly more John Hopkins graduates and slightly fewer UMCP graduates than was in the population. There were more education and fine arts majors among the survey participants and fewer graduates in certain high technology fields (the biological and physical sciences, engineering and mathematics) than would have been expected had all doctoral degree recipients responded. There was a greater percentage of women (50 percent) in the respondent group than among all doctoral degree recipients (42 percent). There also was considerably fewer foreign students among the survey participants from public campuses (15 percent) than among all doctoral graduates from these institutions (33 percent). This is not surprising, because of the difficulty of soliciting responses from graduates who had returned to their own countries. These differences between the respondent group and all doctoral graduates need to be taken into consideration when interpreting the survey findings.

Employment Analysis

Tables 30 to 52 display the employment and occupational status of Maryland doctoral graduates on the basis of the particular year in which they earned their degree, their campus, their major academic program, and gender and race.

A substantial majority of doctoral degree graduates (88 percent) reported that they held full-time jobs. Less than 2 percent were unemployed (seeking a job but could not find it). The unemployment rate was highest in the fields of fine arts (8.1 percent), agriculture (6.7 percent), area studies (6.3 percent), and foreign languages (5.6 percent). A greater percentage of African Americans (5.3 percent) and all racial minorities combined (2.9 percent) were unemployed than the average of all students.

Of those graduates employed full-time, 38 percent were working in Maryland. Less than half were working on campus. Forty-one percent reported that their current employer was a four-year college or university, and 2 percent were working at a community college. Nineteen percent indicated that they were employed in business or industry and 13 percent for a government agency. The fields of study which had the greatest percentage of graduates employed in Maryland were education (63 percent), public affairs (48 percent), the health professions (46 percent), and the biological sciences (41 percent). Among the lowest: mathematics (10 percent), business (13 percent), the social sciences (20 percent), and computer science (27 percent). Among the fields in which there was a larger number of Ph.D graduates employed in business, government or a health facility than in higher education were engineering (71 percent), the biological sciences (61 percent), the physical sciences (48 percent), and computer science (44 percent). A greater percentage of women (52 percent) than men (36 percent) were employed at a college or university. Nearly half (49 percent) of all male Ph.D graduates were working in business or government. A majority of African Americans (63 percent) held higher education positions, while just 10 percent had jobs in business or government.

Thirty percent of the graduates with full-time employment reported that they currently worked as an educator. Ten percent were life scientists, eight percent were engineers, and seven percent were physical scientists. A higher percentage of the graduates who had been in the job market the longest reported being educators. One-third or more of the graduates who earned their degree in 1992 or 1993 were educators, compared to one-quarter of those who received their doctorate in 1996. Forty percent of the women reported that they were educators, compared to 22 percent of the men. More than one-third (35 percent) of the men indicated that they were employed as engineers or life or physical scientists; thirteen percent of the women were in these professions. A majority of African Americans (54 percent) were employed as educators and another 20 percent as educational administrators.

The median annual salary of graduates with full-time employment was $56,200. Not surprisingly, the longer the period since graduation, the higher the average annual salary which ranged from $58,750 for those who earned a degree in 1992 to $51,800 for those who received their doctorate in 1996. Among the graduates with the highest salaries were those who majored in computer science ($72,170) and engineering ($68,900). The lowest salaries were found among graduates whose fields were the fine arts ($38,610), letters ($39,810) and the biological sciences ($44,720).

A substantial majority (84 percent) of those employed full-time rated their doctoral studies as excellent or good in terms of the way it had prepared them for their current job--with more graduates saying "excellent." Only 3 percent deemed their job preparation to be inadequate.

More than two-thirds of the graduates (69 percent) reported that their job was directly related to their doctoral major. One-fourth indicated that it was somewhat related, and just 6 percent said it was not related. Among the fields which had the highest percentage of graduates with jobs directly related to their major were psychology (91 percent), public affairs (83 percent), fine arts (79 percent), social sciences (77 percent), letters (75 percent), and computer science (74 percent). Among the lowest were graduates in the physical sciences (56 percent) and engineering (58 percent).

In an indication of the number of doctoral degree recipients who have more education than they require for their current position, 37 percent of those with a full-time job indicated that they did not need a doctorate to obtain their current position. The disciplines which had among the greatest percentage of these graduates were education (63 percent), engineering (49 percent), and fine arts (49 percent).

Asked if they would choose the same doctoral field again if they were to do it over, 70 percent agreed (with 43 percent strongly agreeing) and 11 percent disagreed. The remaining 20 percent were uncertain. Three-fourths of the graduates who had been in the job market the longest (since 1992) agreed with the statement--the highest percentage of any of the graduation year categories. Graduates in the physical sciences were the least enthusiastic about their choice of major. Just slightly over half (54 percent) of these doctoral degree recipients agreed that they would select the same field again, and 20 percent disagreed.

Nearly two thirds (66 percent) of the doctoral graduates who were Maryland residents at the time they began their studies continued to live in the State. More than one fourth

(26 percent) of those who were out-of-state residents at the time of matriculation stayed in Maryland after completing their degrees. A similar pattern emerged with respect to the place of employment of doctoral degree recipients with full-time jobs. A majority of the graduates (53 percent) who were Maryland residents at the time they enrolled were working in the State. Nearly one-quarter (23 percent) of those who lived out-of-state at matriculation held jobs in Maryland.

All of the campus representatives interviewed for this study maintained that their academic departments, and especially the graduate faculty, are committed to helping to find jobs for doctoral students in their programs. They reported that faculty serve as mentors to their students and use their contacts in academic circles, government and industry to place them. Departments also provide internships and offer training in job search techniques. UMCP has a program that recognizes faculty who have been excellent mentors and offers workshops that teach faculty how to be a good mentor. "The ultimate reputation of a faculty member is not just what they have published but who their students are and what they have done," one of Johns Hopkins associate deans said. "Few, if any, students are left on their own." Helping students to complete their degree also is a priority. "We try to help students through the process by emphasizing that the best dissertation is a done dissertation," UMCP's graduate school dean said.

Departments at the doctoral institutions also provide career information to applicants and students in its programs about the status of the job market for Ph.D recipients and their prospects of getting employment after earning their degrees. UMBC, in particular, shares data with incoming students about where recent graduates found employment. Nearly all of the departments at each institution keep track of the career paths of recent doctoral degree recipients and collect information about the specific jobs obtained by each of their graduates.

Maryland's recent Ph.D graduates were asked this open-ended question on the survey: "What changes in your doctoral education at our university would have better prepared you for getting a job?" Many graduates simply indicated that their academic departments had done a very good job getting them ready for employment. The most frequent suggestions, including the number who offered them, are as follows:

- Greater mentoring, help and advice from faculty (50)
- More teaching experience and training (50)
- More information about job opportunities outside the academic world (35)
- More applications-oriented curricula (33)
- Workshops and other programs on job search skills (30)
- Help in getting published, particularly prior to graduation (26)
- Better knowledge about the job market in student's field (24)
- Assistance with writing and presentations skills (24)
- Training in the preparation of research proposals and grants (23)

POLICY QUESTIONS

There is keen debate within and outside of academic circles concerning whether American campuses are producing more Ph.Ds than the market can absorb. Some believe that higher education institutions need to practice greater control over the number of students that they are admitting into doctoral programs, citing the scarcity of faculty openings in many disciplines. Others disagree, contending that academicians should not try to divine the future of the job market but should focus instead on broadening Ph.D education to make it responsive to the new clients for doctoral graduates that are emerging in industry and government. Those opposing limits on doctoral enrollment also argue that society benefits from a more highly educated populace. How this clash of ideas is resolved has important implications for both students and the public because of the substantial time and money that is involved in obtaining a Ph.D. and the cost to the taxpayers of establishing and maintaining these programs.

These are policy questions arising from this study:

In light of the challenging job market in academe, should Maryland colleges and universities limit enrollment growth in most Ph.D. programs, with exceptions for disciplines in which doctoral graduates remain in strong demand?

Although an overwhelming majority of recent Maryland doctoral degree recipients hold full-time employment, less than half (43 percent) are working in postsecondary education. In addition, more than one-third of the graduates indicated that a Ph.D was not needed for their current job. Nonetheless, the number of doctorates awarded by Maryland colleges and universities reached an all-time high in 1998 and has grown substantially in recent years. Indeed, doctoral degree production in Maryland has exceeded the national growth rate for these degrees regardless of whether one examines the figures over a 10, 20 or 30 year time span. There are signs that the number of students enrolling in doctoral programs in Maryland is starting to decline, but the numbers remain high, full-time enrollment remains steady, and nearly two-thirds of all Ph.D. students at public campuses alone are out-of-state residents.

However, because the demand for doctoral degree recipients varies with disciplines, across the board cuts in Ph.D programs have debatable merit. A 1996 Commission study on the workforce needs of Maryland employers found that there was a strong demand for, but difficulty in attracting sufficient qualified applicants for, positions requiring a doctoral degree in the health professions and in certain high technology fields (engineering, the physical and biological sciences, and computer science). UMBC's graduate school dean noted in the interview conducted for this study that his institution has experienced difficulty finding faculty in these fields because of competition from industry.

Are Maryland citizens benefiting from the large number of foreign students enrolled in doctoral programs in the State?

Thirty percent of the doctorates awarded at Maryland campuses in 1998 were earned by students from other countries. Foreign students accounted for a majority of the Ph.Ds in engineering and computer science (both 57 percent), nearly half in mathematics (45 percent), more than one third in the physical sciences (37 percent) and a quarter in the biological and social sciences. The growth in the number of doctorates awarded to students from outside the United States at Maryland colleges and universities since the mid 1970s has greatly outpaced the national trend. The pipeline of foreign doctoral students does not appear to be slowing. The proportion which non U.S. citizens make up of all doctoral students in Maryland (31 percent) hit an historic high in 1998. Academic affairs staff interviewed for this study insisted that Maryland was well-served by the enrollment of foreign students in doctoral programs. They pointed out that these individuals take jobs that are strongly demanded by employers in the State and for which qualified applicants are scarce. Maryland is helped even when these students return to their own countries, since many achieve leadership positions and the ties established with them can produce economic development advantages for the State. In addition, doctoral graduates from other countries provide Maryland with college instructors in high technology fields, fulfilling the requirement of state law that campuses "recruit and retain nationally and internationally prominent and diverse faculty members." However, concerns have been expressed about the wisdom of devoting public dollars to research that can leave the United States when a student returns home.

What actions can be taken to increase the recruitment and retention of African Americans in doctoral programs in Maryland, particularly in fields outside of education?

While the proportion which African Americans make up of the enrollment in doctoral programs in Maryland has inched up from 5 to 7 percent since 1989, just 4 percent of the Ph.Ds awarded in the State in 1998 went to African Americans. Indeed, only 29 doctorates were earned by African Africans at Maryland public campuses in 1998--the second lowest figure in the past 10 years. In addition, African American participation in doctoral studies has tended to be overly concentrated in education. More than one-third of the doctorates earned by African Americans were in this discipline. No more than 5 percent of the Ph.Ds attained in other major programs such as health, engineering, and the biological, physical and social sciences went to African Americans in 1998. From the interviews with academic affairs staff from the doctoral granting campuses, it was clear that all are committed to recruiting and retaining African Americans in their doctoral program and have activities aimed at accomplishing this goal. But the statistics suggest that more needs to be done.

Should doctoral programs in selected fields at Maryland campuses be restructured to prepare graduates better for a broad spectrum of career opportunities, especially in non campus settings?

According to the results of the Commission's survey, a majority (57 percent) of recent Maryland doctoral degree recipients with full-time jobs were employed outside of academe and nearly two-thirds described their occupation as other than involved with education. Nearly one-third of the doctoral graduates had jobs with business or government. Of those graduates who earned their degrees in high technology fields, such as engineering, the biological and physical sciences and computer science, the percentage who had jobs outside of the academic world was even greater. Asked to identify the changes in their doctoral education that would have better prepared them for a job, many survey respondents specifically mentioned more information about job opportunities outside higher education and more applications-oriented curricula. These findings reflect a national trend: the percentage of doctoral degree recipients obtaining employment in academe has decreased, while more Ph.Ds are obtaining jobs in business, government, health-related facilities or non-profit organizations. As a result, some believe that doctoral programs in selected disciplines should be shortened and made more general in orientation to appeal to the concerns of prospective employers outside the academy.

Should the number of "applied doctorates" offered by Maryland colleges and universities be expanded?

Some colleges and universities whose primary mission is outside the realm of research are offering doctoral programs designed to prepare students for non academic careers. In some cases, this has involved creating a new type of degree. The University of Texas-Dallas, for example, provides a Doctor of Chemistry (D.Chem). The curriculum combines traditional doctoral coursework with internships with chemical companies and the preparation of a thesis which stresses the student's ability to work with a range of problems rather than do in-depth research on a narrow topic in the discipline. As one of the campus representatives described it, an applied doctoral program "has the same theory and content as a regular program, but it takes the knowledge gained from the research and uses it to solve societal problems." The Commission recently approved mission statements for Bowie, Towson and UMUC that authorizes the development of applied doctorates in certain programs. This action was taken after the Commission was satisfied that there was documented economic development need for the approved programs. However, several of the academic affairs personnel interviewed for this study were dismissive of applied doctorates. Said one: "Employers do not want people who cannot undertake intensive research ventures, and that is what Ph.D programs are all about. Not even non academic employers want 'applied' doctoral graduates. They could hire masters' students."

TABLES

Table 1. Trends in Applications, Acceptances and New Enrollments in Doctoral Programs at UMB

Biological Sciences			
	Applications	Acceptances	New Enrollments
1993	396	90	44
1994	385	74	47
1995	470	106	49
1996	382	90	47
1997	449	97	69
Health Professions			
	Applications	Acceptances	New Enrollments
1993	477	50	34
1994	600	66	41
1995	608	50	28
1996	582	64	52
1997	631	63	42
Public Affairs			
	Applications	Acceptances	New Enrollments
1992	21	15	14
1993	27	17	12
1994	20	18	11
1995	29	21	9
1996	10	7	-

Source: University of Maryland, Baltimore

Table 2. Trends in Applications, Acceptances and New Enrollments in Doctoral Programs at UMBC

Biological Sciences			
	Applications	Acceptances	New Enrollments
1993	105	34	11
1994	89	20	13
1995	94	26	12
1996	90	22	10
1997	68	34	19
Computer Science			
	Applications	Acceptances	New Enrollments
1993	43	24	6
1994	51	27	8
1995	64	49	14
1996	64	47	6
1997	74	25	14
Engineering			
	Applications	Acceptances	New Enrollments
1993	100	57	22
1994	115	121	26
1995	105	60	15
1996	134	88	27
1997	125	28	18
Mathematics			
	Applications	Acceptances	New Enrollments
1933	47	33	11
1994	31	24	4
1995	36	25	6
1996	34	24	7
1997	48	15	6

Physical Sciences			
	Applications	Acceptances	New Enrollments
1933	46	24	7
1994	71	32	16
1995	97	29	12
1996	108	34	18
1997	136	40	14

Psychology			
	Applications	Acceptances	New Enrollments
1933	252	46	20
1994	277	34	12
1995	298	40	22
1996	313	22	8
1997	253	33	17

Policy Sciences			
	Applications	Acceptances	New Enrollments
1933	43	13	11
1994	40	23	15
1995	40	17	10
1996	32	16	11
1997	22	11	8

Source: University of Maryland Baltimore County

Table 3. Trends in Applications, Acceptances and New Enrollments in Doctoral Programs at UMCP

Agriculture			
	Applications	Acceptances	New Enrollments
1992	147	57	15
1993	186	47	30
1994	141	42	24
1995	138	48	21
1996	Incomplete data		
Area Studies			
	Applications	Acceptances	New Enrollments
1992	41	22	10
1993	62	30	17
1994	56	19	10
1995	81	20	10
1996	na	na	na
Biological Sciences			
	Applications	Acceptances	New Enrollments
1992	630	194	85
1993	621	193	85
1994	556	187	85
1995	591	175	74
1996	520	131	44
Business			
	Applications	Acceptances	New Enrollments
1992	239	57	27
1993	244	46	26
1994	192	21	9
1995	178	21	15
1996	172	21	10

Communications			
	Applications	Acceptances	New Enrollments
1992	73	23	12
1993	72	21	9
1994	68	22	12
1995	67	15	8
1996	na	na	na

Computer Science			
	Applications	Acceptances	New Enrollments
1992	312	71	34
1993	333	86	40
1994	288	72	41
1995	304	102	39
1996	na	na	na

Education			
	Applications	Acceptances	New Enrollments
1992	353	173	119
1993	390	166	112
1994	412	185	115
1995	419	176	125
1996	na	na	na

Engineering			
	Applications	Acceptances	New Enrollments
1992	609	277	101
1993	612	295	113
1994	596	166	92
1995	661	174	104
1996	676	194	107

Fine Arts

	Applications	Acceptances	New Enrollments
1992	106	60	31
1993	144	88	39
1994	134	68	40
1995	154	69	32
1996	na	na	na

Foreign Languages

	Applications	Acceptances	New Enrollments
1992	33	26	13
1993	32	20	11
1994	34	21	10
1995	45	24	13
1996	Incomplete data		

Health Professions

	Applications	Acceptances	New Enrollments
1992	3	---	0
1993	4	---	0
1994	6	---	0
1995	3	---	0
1996	na	na	na

Letters

	Applications	Acceptances	New Enrollments
1992	198	68	36
1993	242	105	56
1994	289	102	55
1995	239	90	43
1996	Incomplete data		

Library Science

	Applications	Acceptances	New Enrollments
1992	7	3	2
1993	20	3	1
1994	18	4	3
1995	18	3	2
1996	17	5	3

Mathematics

	Applications	Acceptances	New Enrollments
1992	325	186	51
1993	274	180	50
1994	265	162	51
1995	266	136	40
1996	na	na	na

Physical Sciences

	Applications	Acceptances	New Enrollments
1992	485	160	42
1993	456	173	65
1994	444	124	39
1995	407	138	44
1996	Incomplete data		

Psychology

	Applications	Acceptances	New Enrollments
1992	634	46	23
1993	668	55	26
1994	617	36	19
1995	499	39	17
1996	na	na	na

Social Sciences			
	Applications	Acceptances	New Enrollments
1992	744	266	114
1993	808	282	117
1994	803	234	114
1995	783	232	99
1996	Incomplete data		

Source: University of Maryland, College Park

Table 4. Trends in Applications, Acceptances and New Enrollments in Doctoral Programs at The Johns Hopkins University

Area Studies			
	Applications	Acceptances	New Enrollments
1994	31	13	4
1995	31	15	8
1996	30	17	10
1997	37	12	5
1998	36	10	8
Biological Sciences			
	Applications	Acceptances	New Enrollments
1994	257	90	37
1995	212	71	37
1996	169	65	31
1997	201	62	33
1998	235	57	27
Computer Science			
	Applications	Acceptances	New Enrollments
1994	104	32	13
1995	153	36	23
1996	199	32	13
1997	163	57	23
1998	140	53	21
Engineering			
	Applications	Acceptances	New Enrollments
1994	508	86	57
1995	412	139	81
1996	493	129	61
1997	524	126	46
1998	680	154	74

Fine Arts

	Applications	Acceptances	New Enrollments
1994	95	17	8
1995	79	8	5
1996	43	5	5
1997	57	15	4
1998	63	19	11

Foreign Languages

	Applications	Acceptances	New Enrollments
1994	94	26	13
1995	81	17	13
1996	100	12	11
1997	78	26	13
1998	71	27	13

Letters

	Applications	Acceptances	New Enrollments
1994	560	39	27
1995	489	35	19
1996	432	40	20
1997	369	44	15
1998	343	40	17

Mathematics

	Applications	Acceptances	New Enrollments
1994	215	42	14
1995	199	30	30
1996	168	70	17
1997	168	68	14
1998	86	62	15

Physical Sciences

	Applications	Acceptances	New Enrollments
1994	827	140	44
1995	709	145	44
1996	555	137	43
1997	529	130	39
1998	536	134	46

Psychology

	Applications	Acceptances	New Enrollments
1994	127	9	6
1995	135	14	6
1996	111	8	8
1997	125	16	5
1998	150	24	14

Social Sciences

	Applications	Acceptances	New Enrollments
1994	820	95	63
1995	670	99	48
1996	727	150	62
1997	641	136	61
1998	583	123	45

Source: The Johns Hopkins University

Table 5. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Campus)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
Full-Time	89	108	128	123	121	109	108	95	159	161
Part-Time	269	278	290	305	326	351	350	369	304	304
Total	358	386	418	428	447	460	458	464	463	465
UMBC										
Full-Time	213	240	281	308	340	333	324	310	308	318
Part-Time	157	171	181	190	198	232	229	213	201	185
Total	370	411	462	498	538	565	553	523	509	503
UMCP										
Full-Time	2177	2295	2340	2323	2301	2323	2305	2376	2360	2237
Part-Time	1789	1736	1709	1709	1755	1659	1638	1528	1482	1480
Total	3966	4031	4049	4032	4056	3982	3943	3904	3842	3717
UMES										
Full-Time	6	7	10	8	6	6	6	5	3	4
Part-Time	5	10	6	6	8	6	4	5	4	4
Total	11	17	16	14	14	12	10	10	7	8
Morgan										
Full-Time	4	1	3	3	9	4	3	5	19	18
Part-Time	50	61	53	50	42	41	53	44	66	73
Total	54	62	56	53	51	45	56	49	85	91
All Publics										
Full-Time	2489	2651	2762	2765	2777	2775	2746	2791	2849	2738
Part-Time	2270	2256	2239	2260	2329	2289	2274	2159	2057	2052
Total	4759	4907	5001	5025	5106	5064	5020	4950	4906	4790
Baltimore Hebrew										
Full-Time	9	8	7	7	11	8	13	9	0	14
Part-Time	0	0	0	0	0	0	0	0	10	0
Total	9	8	7	7	11	8	13	9	10	14

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Johns Hopkins										
Full-Time	1713	1780	1910	1941	1951	2019	2060	2031	1992	2000
Part-Time	168	189	187	179	327	384	240	268	333	296
Total	1881	1969	2097	2120	2278	2403	2300	2299	2325	2296
Loyola										
Full-Time	26	21	25	24	21	21	19	36	38	53
Part-Time	14	20	22	19	22	26	20	17	14	19
Total	40	41	47	43	43	47	39	53	52	72
Ner Israel										
Full-Time	30	12	44	56	20	39	38	33	20	24
Part-Time	0	0	0	0	0	0	0	0	0	0
Total	30	12	44	56	20	39	38	33	20	24
St. Mary's Seminary										
Full-Time	46	25	9	-	-	-	-	-	-	-
Part-Time	0	0	0	-	-	-	-	-	-	-
Total	46	25	9	-	-	-	-	-	-	-
All Independents										
Full-Time	1824	1846	1995	2028	2003	2087	2130	2109	2050	2091
Part-Time	182	209	209	198	349	410	260	285	357	315
Total	2006	2055	2204	2226	2352	2497	2390	2394	2407	2406
All Campuses										
Full-Time	4313	4497	4757	4793	4780	4862	4876	4900	4899	4829
Part-Time	2452	2465	2448	2458	2678	2699	2534	2444	2414	2367
Total	6765	6962	7205	7251	7458	7561	7410	7344	7313	7196

Note: Peabody enrollments included with Johns Hopkins. All publics and all campuses for 1998 include University of Baltimore.

Source: Maryland Higher Education Commission Enrollment Information System

Table 6. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Campus and Gender)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
Men	157	170	176	177	169	160	170	164	173	182
Women	201	216	242	251	278	300	288	300	290	283
% Women	56%	56%	58%	59%	62%	65%	63%	65%	63%	61%
UMBC										
Men	202	231	254	258	290	308	301	288	268	263
Women	168	180	208	240	248	257	252	235	241	240
% Women	45%	44%	45%	48%	46%	46%	46%	45%	47%	48%
UMCP										
Men	2249	2302	2312	2278	2288	2231	2174	2184	2158	2107
Women	1717	1729	1737	1754	1768	1751	1769	1720	1684	1610
% Women	43%	43%	43%	44%	44%	44%	45%	44%	44%	43%
UMES										
Men	9	10	10	8	8	7	4	7	5	5
Women	2	7	6	6	6	5	6	3	2	3
% Women	18%	41%	38%	43%	43%	42%	60%	30%	29%	38%
Morgan										
Men	22	25	17	18	20	18	22	22	30	34
Women	32	37	39	35	31	27	34	27	55	57
% Women	59%	60%	70%	66%	61%	60%	61%	55%	65%	63%
All Publics										
Men	2639	2738	2769	2739	2775	2724	2671	2665	2634	2594
Women	2120	2169	2232	2286	2331	2340	2349	2285	2272	2196
% Women	45%	44%	45%	46%	46%	46%	47%	46%	46%	46%
Baltimore Hebrew										
Men	5	4	3	3	6	4	8	5	6	7
Women	4	4	4	4	5	4	5	4	4	7
% Women	44%	50%	57%	57%	46%	50%	39%	44%	40%	50%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Johns Hopkins										
Men	1112	1147	1212	1206	1281	1337	1299	1301	1269	1222
Women	769	822	885	914	997	1066	1001	998	1056	1074
% Women	41%	42%	42%	43%	44%	44%	44%	43%	45%	47%
Loyola										
Men	24	24	28	26	25	24	18	19	18	24
Women	16	17	19	17	18	23	21	34	34	48
% Women	40%	42%	40%	40%	42%	49%	53%	64%	65%	67%
Ner Israel										
Men	30	12	44	56	20	39	38	33	20	24
Women	0	0	0	0	0	0	0	0	0	0
% Women	0	0	0	0	0	0	0	0	0	0%
St. Mary's Seminary										
Men	42	23	9	-	-	-	-	-	-	-
Women	4	2	0	-	-	-	-	-	-	-
% Women	9%	8%	0%	-	-	-	-	-	-	-
All Independents										
Men	1213	1210	1296	1291	1332	1404	1363	1358	1313	1277
Women	793	845	908	935	1020	1090	1027	1036	1094	1129
% Women	40%	41%	41%	42%	43%	44%	43%	43%	46%	47%
All Campuses										
Men	3852	3948	4065	4030	4107	4128	4034	4023	3947	3871
Women	2913	3014	3140	3221	3351	3433	3376	3321	3366	3325
% Women	43%	43%	44%	44%	45%	45%	46%	45%	46%	46%

Note: Peabody enrollments included with Johns Hopkins. All publics and all campuses for 1998 include University of Baltimore.
Source: Maryland Higher Education Commission Enrollment Information System

Table 7. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Campus and Ethnicity)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
African American	13	22	26	25	26	24	21	17	20	27
All Minorities	30	44	49	47	51	50	55	54	52	63
% African American	4%	6%	6%	6%	6%	5%	5%	4%	4%	6%
% All Minorities	8%	11%	12%	11%	11%	11%	12%	12%	11%	14%
UMBC										
African American	19	25	31	31	36	36	37	30	36	32
All Minorities	37	45	55	52	54	58	61	61	70	66
% African American	5%	6%	7%	6%	7%	6%	7%	6%	7%	6%
% All Minorities	10%	11%	12%	10%	10%	10%	11%	12%	14%	13%
UMCP										
African American	217	234	237	237	233	250	271	278	263	258
All Minorities	380	415	431	444	468	535	541	558	551	518
% African American	6%	6%	6%	6%	6%	6%	7%	7%	7%	7%
% All Minorities	10%	10%	11%	11%	12%	13%	14%	14%	14%	14%
UMES										
African American	2	3	2	2	3	2	1	1	0	3
All Minorities	2	3	2	2	3	2	1	1	0	3
% African American	18%	18%	13%	14%	21%	17%	10%	10%	0%	38%
% All Minorities	18%	18%	13%	14%	21%	17%	10%	10%	0%	38%
Morgan										
African American	41	50	45	43	42	36	46	42	75	79
All Minorities	42	50	45	43	42	36	47	43	77	83
% African American	76%	81%	80%	81%	82%	80%	82%	86%	88%	87%
% All Minorities	78%	81%	80%	81%	82%	80%	84%	88%	91%	91%
All Publics										
African American	292	334	341	338	340	348	376	368	394	399
All Minorities	491	557	582	588	618	681	705	717	750	733
% African American	6%	7%	7%	7%	7%	7%	8%	7%	8%	8%
% All Minorities	10%	11%	12%	12%	12%	13%	14%	15%	15%	15%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Baltimore Herbrew										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	0	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Johns Hopkins										
African American	27	32	35	40	56	63	68	71	73	62
All Minorities	114	139	145	152	190	217	233	239	235	234
% African American	1%	2%	2%	2%	3%	3%	3%	3%	3%	3%
% All Minorities	6%	7%	7%	7%	8%	9%	10%	10%	10%	10%
Loyola										
African American	1	2	2	2	6	7	6	7	7	5
All Minorities	1	2	2	3	6	7	6	7	8	9
% African American	3%	5%	4%	5%	14%	15%	15%	13%	14%	7%
% All Minorities	3%	5%	4%	7%	14%	15%	15%	13%	15%	13%
Ner Israel										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	0	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Mary's Seminary										
African American	0	0	0	-	-	-	-	-	-	-
All Minorities	0	0	0	-	-	-	-	-	-	-
% African American	0%	0%	0%	-	-	-	-	-	-	-
% All Minorities	0%	0%	0%	-	-	-	-	-	-	-
All Independents										
African American	28	34	37	42	62	70	74	78	80	67
All Minorities	115	141	147	155	196	224	239	246	243	243
% African American	1%	2%	2%	2%	3%	3%	3%	3%	3%	3%
% All Minorities	6%	7%	7%	7%	8%	9%	10%	10%	10%	10%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All Campuses										
African American	320	368	378	380	402	418	450	446	474	466
All Minorities	606	698	729	743	814	905	944	963	993	976
% African American	5%	5%	5%	5%	5%	6%	6%	6%	7%	7%
% All Minorities	9%	10%	10%	10%	11%	12%	13%	13%	14%	14%

Notes: Peabody enrollments included with Johns Hopkins. "All minorites" include African American, Asian American, Hispanic and Native American. All publics and all campuses for 1998 include University of Baltimore.

Source: Maryland Higher Education Commission Enrollment Information System

Table 8. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Campus and Citizenship)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
U.S.	279	284	303	306	324	339	328	341	339	337
Foreign	79	102	115	122	123	121	130	123	124	128
% Foreign	22%	26%	28%	29%	28%	26%	28%	27%	27%	28%
UMBC										
U.S.	264	282	329	336	364	383	385	350	346	336
Foreign	106	129	133	162	147	182	168	173	163	167
% Foreign	29%	31%	29%	33%	32%	32%	30%	33%	32%	33%
UMCP										
U.S.	2280	2847	2834	2795	2809	2836	2784	2739	2654	2474
Foreign	1086	1184	1215	1237	1247	1146	1159	1165	1188	1243
% Foreign	27%	29%	30%	31%	31%	29%	29%	30%	31%	33%
UMES										
U.S.	9	10	8	7	8	7	7	6	4	4
Foreign	2	7	8	7	6	5	3	4	3	4
% Foreign	18%	41%	50%	50%	43%	42%	30%	40%	43%	50%
Morgan										
U.S.	53	62	56	53	50	45	56	49	85	91
Foreign	1	0	0	0	1	0	0	0	0	0
% Foreign	2%	0%	0%	0%	2%	0%	0%	0%	0%	0%
All Publics										
U.S.	3485	3485	3530	3497	3555	3610	3560	3485	3428	3248
Foreign	1274	1422	1471	1528	1551	1454	1460	1465	1478	1542
% Foreign	27%	29%	29%	30%	30%	29%	29%	30%	30%	32%
Baltimore Hebrew										
U.S.	9	8	7	7	11	8	13	9	10	14
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Johns Hopkins										
U.S.	1346	1423	1484	1511	1630	1761	1629	1620	1611	1588
Foreign	517	546	613	609	648	642	671	679	714	708
% Foreign	28%	28%	29%	29%	28%	27%	29%	30%	31%	31%
Loyola										
U.S.	38	38	39	38	37	40	33	51	50	69
Foreign	2	3	8	5	6	7	6	2	2	3
% Foreign	5%	7%	17%	12%	14%	15%	15%	4%	4%	4%
Ner Israel										
U.S.	30	12	44	56	20	39	38	33	20	24
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Mary's Seminary										
U.S.	46	25	9	-	-	-	-	-	-	-
Foreign	0	0	0	-	-	-	-	-	-	-
% Foreign	0%	0%	0%	-	-	-	-	-	-	-
All Independents										
U.S.	1487	1506	1583	1612	1698	1848	1713	1713	1691	1695
Foreign	519	549	621	614	654	649	677	681	716	711
% Foreign	26%	27%	28%	28%	28%	26%	28%	28%	30%	30%
All Campuses										
U.S.	4972	4991	5113	5109	5253	5458	5273	5198	5119	4943
Foreign	1793	1971	2092	2142	2205	2103	2137	2146	2194	2253
% Foreign	27%	28%	29%	30%	30%	28%	29%	29%	30%	31%

Note: Peabody enrollments included with Johns Hopkins. All publics and all campuses for 1998 include University of Baltimore.
Source: Maryland Higher Education Commission Enrollment Informtion System

Table 9. Trends in Doctoral Enrollments at Maryland Public Higher Education Institutions (By Campus and Residency)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
Maryland	146	156	161	155	175	171	170	182	187	182
Out-of-State	208	225	255	265	262	286	284	279	264	275
% Out-of-State	59%	59%	61%	63%	60%	63%	63%	61%	59%	60%
UMBC										
Maryland	206	218	239	243	264	276	276	239	236	233
Out-of-State	151	180	212	241	266	285	270	274	265	265
% Out-of-State	42%	45%	47%	50%	50%	51%	50%	53%	53%	53%
UMCP										
Maryland	1515	1468	1455	1362	1384	1303	1246	1263	1236	1126
Out-of-State	2446	2556	2586	2664	2666	2672	2688	2637	2598	2583
% Out-of-State	62%	64%	64%	66%	66%	67%	68%	68%	68%	70%
UMES										
Maryland	5	8	6	7	7	6	6	4	4	2
Out-of-State	5	8	9	6	6	6	4	5	3	4
% Out-of-State	50%	50%	60%	46%	46%	50%	40%	56%	43%	67%
Morgan										
Maryland	50	58	53	49	47	43	53	42	63	69
Out-of-State	4	4	3	3	4	2	3	7	22	21
% Out-of-State	7%	7%	5%	6%	8%	4%	5%	14%	26%	23%
All Public Campuses										
Maryland	1922	1908	1914	1816	1877	1799	1751	1730	1726	1618
Out-of-State	2814	2973	3065	3179	3204	3251	3249	3202	3152	3148
% Out-of-State	59%	61%	62%	64%	63%	64%	65%	65%	65%	66%

Note: All public campuses for 1998 include enrollments from the University of Baltimore. These figures are not available for Maryland independent institutions

Source: Maryland Higher Education Commission Enrollment Information System

Table 10. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Program)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
Full-Time	56	68	58	65	63	56	68	66	68	62
Part-Time	27	30	35	35	39	48	38	36	39	36
Total	83	98	93	100	102	104	106	102	107	98
Area Studies										
Full-Time	40	31	36	36	29	28	37	45	45	51
Part-Time	36	33	29	35	41	34	34	32	36	30
Total	76	64	65	71	70	62	71	77	81	81
Biological Sciences										
Full-Time	593	623	671	691	705	733	766	806	849	860
Part-Time	251	272	273	281	286	266	292	265	237	269
Total	844	895	944	972	991	999	1058	1071	1086	1129
Business										
Full-Time	72	73	79	84	86	72	65	60	59	62
Part-Time	24	23	30	33	31	22	18	24	23	12
Total	96	96	109	117	117	94	83	84	82	74
Communications										
Full-Time	35	37	42	37	38	38	35	29	31	28
Part-Time	47	28	31	28	29	29	24	27	23	25
Total	82	65	73	65	67	67	59	56	54	53
Computer Science										
Full-Time	185	188	208	209	194	201	209	200	215	213
Part-Time	86	104	127	122	123	102	110	101	99	112
Total	271	292	335	331	317	303	319	301	314	325
Education										
Full-Time	293	300	316	295	267	273	297	309	273	255
Part-Time	735	665	632	596	583	550	541	508	516	476
Total	1028	965	948	891	850	823	838	817	789	731

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
Full-Time	594	677	717	735	780	775	797	786	811	845
Part-Time	231	217	233	270	296	292	255	284	258	257
Total	825	894	950	1005	1076	1067	1052	1070	1069	1102
Fine Arts										
Full-Time	125	136	148	141	158	167	155	171	152	147
Part-Time	87	93	96	95	113	115	135	111	117	101
Total	212	229	244	236	271	282	290	282	269	248
Foreign Languages										
Full-Time	83	74	73	76	92	92	94	89	78	80
Part-Time	24	17	24	29	20	18	24	24	20	26
Total	107	91	97	105	112	110	118	113	98	106
Health Professions										
Full-Time	381	403	434	451	448	478	452	423	445	243
Part-Time	177	198	211	239	280	284	322	377	373	375
Total	558	601	645	690	728	762	774	800	818	798
Home Economics										
Full-Time	24	21	19	16	12	5	4	2	6	2
Part-Time	26	22	25	17	15	16	10	8	3	2
Total	50	43	44	33	27	21	14	10	9	4
Letters										
Full-Time	186	201	191	182	199	212	216	203	219	215
Part-Time	85	102	114	118	113	105	91	92	100	92
Total	271	303	305	300	312	317	307	295	319	307
Library Science										
Full-Time	12	7	5	4	7	6	8	10	9	8
Part-Time	7	10	7	12	5	11	6	6	8	7
Total	19	17	12	16	12	17	14	16	17	15
Mathematics										
Full-Time	203	192	221	215	229	227	238	240	223	199
Part-Time	71	75	56	64	72	81	77	71	63	69
Total	274	267	277	279	301	308	315	311	286	268

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Sciences										
Full-Time	583	609	605	587	573	588	572	573	532	488
Part-Time	110	121	93	108	115	110	125	77	68	99
Total	693	730	698	695	688	698	697	650	600	587
Psychology										
Full-Time	204	213	213	236	223	205	195	215	210	226
Part-Time	70	70	87	71	90	109	107	84	79	74
Total	274	283	300	307	313	314	302	299	289	300
Public Affairs										
Full-Time	21	21	26	23	18	17	14	10	9	12
Part-Time	66	69	64	59	49	43	40	37	37	32
Total	87	90	90	82	67	60	54	47	46	44
Social Sciences										
Full-Time	507	552	606	624	606	611	586	604	630	599
Part-Time	288	312	278	246	275	279	284	274	266	258
Total	795	864	884	870	881	890	870	878	896	857
Theology										
Full-Time	85	45	60	63	31	47	51	9	20	38
Part-Time	0	0	0	0	0	0	0	0	10	0
Total	85	45	60	63	31	47	51	9	30	38
Interdisciplinary Studies										
Full-Time	29	26	27	23	22	17	17	17	15	16
Part-Time	0	1	0	0	0	0	0	0	0	15
Total	29	27	27	23	22	17	17	17	15	31

Source: Maryland Higher Education Commission Enrollment Information System

Table 11. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Program and Gender)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
Men	53	63	58	65	63	65	62	60	61	55
Women	30	35	35	35	39	39	44	42	46	43
% Women	36%	36%	38%	35%	38%	38%	42%	41%	43%	44%
Area Studies										
Men	25	26	27	32	32	24	27	31	34	34
Women	51	38	38	39	38	38	44	46	47	47
% Women	67%	59%	59%	55%	54%	61%	62%	60%	58%	58%
Biological Sciences										
Men	457	485	512	514	514	508	550	561	560	551
Women	387	410	432	458	477	491	508	510	526	578
% Women	46%	46%	46%	47%	48%	49%	48%	48%	48%	51%
Business										
Men	68	66	77	78	83	68	60	60	56	55
Women	28	30	32	39	34	26	23	24	26	19
% Women	29%	31%	29%	33%	29%	28%	28%	29%	32%	26%
Communications										
Men	42	32	35	33	33	33	28	25	20	24
Women	40	33	38	32	34	34	31	31	34	29
% Women	49%	51%	52%	49%	51%	51%	53%	55%	63%	55%
Computer Science										
Men	222	243	275	266	252	240	258	247	250	262
Women	49	49	60	65	65	63	61	54	64	63
% Women	18%	17%	18%	20%	21%	21%	19%	18%	20%	19%
Education										
Men	341	303	286	272	246	231	221	222	219	208
Women	687	662	662	619	604	592	617	595	570	523
% Women	67%	69%	70%	70%	71%	72%	74%	73%	72%	72%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
Men	702	748	786	817	876	875	867	881	857	868
Women	122	146	164	188	200	192	185	189	212	234
% Women	15%	16%	17%	19%	19%	18%	18%	18%	20%	21%
Fine Arts										
Men	99	103	108	94	109	116	104	106	107	93
Women	113	126	136	142	162	166	186	176	162	155
% Women	53%	55%	56%	60%	60%	59%	64%	62%	60%	63%
Foreign Languages										
Men	36	32	36	38	39	37	38	42	35	30
Women	71	59	61	67	73	73	80	71	63	76
% Women	66%	65%	63%	64%	65%	66%	68%	63%	64%	72%
Health Professions										
Men	231	244	255	266	270	285	283	287	289	276
Women	327	357	390	424	458	477	491	513	529	522
% Women	59%	59%	61%	61%	63%	63%	63%	64%	65%	65%
Home Economics										
Men	8	3	9	8	4	4	3	2	1	0
Women	42	40	35	25	23	17	11	8	8	4
% Women	84%	93%	80%	76%	85%	81%	79%	80%	89%	100%
Letters										
Men	125	144	139	119	126	141	127	128	135	134
Women	146	159	166	181	186	176	180	167	184	173
% Women	54%	53%	54%	60%	60%	56%	59%	57%	58%	56%
Library Science										
Men	7	7	6	5	2	2	1	3	5	5
Women	12	10	6	11	10	15	13	13	12	10
% Women	63%	59%	50%	69%	83%	88%	93%	81%	71%	67%
Mathematics										
Men	211	208	209	204	219	220	227	218	209	199
Women	63	59	68	75	82	88	88	93	77	69
% Women	23%	22%	25%	27%	27%	29%	28%	30%	27%	26%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Sciences										
Men	533	554	526	511	516	509	520	484	443	438
Women	160	176	172	184	172	189	177	166	157	149
% Women	23%	24%	25%	27%	25%	27%	25%	26%	26%	25%
Psychology										
Men	90	96	101	98	103	103	103	100	92	96
Women	184	187	199	209	210	211	199	199	197	204
% Women	67%	66%	66%	68%	67%	67%	66%	67%	68%	68%
Public Affairs										
Men	33	40	41	32	23	18	17	13	13	12
Women	54	50	49	50	44	42	37	34	33	32
% Women	62%	56%	54%	61%	66%	70%	69%	72%	72%	73%
Social Sciences										
Men	478	500	511	511	508	499	482	503	511	491
Women	317	364	373	359	373	391	388	375	385	366
% Women	40%	42%	42%	41%	42%	44%	45%	43%	43%	43%
Theology										
Men	77	39	56	59	26	43	46	5	26	31
Women	8	6	4	4	5	4	5	4	4	7
% Women	9%	13%	7%	6%	16%	9%	10%	44%	13%	18%
Interdisciplinary Studies										
Men	13	9	9	8	9	8	9	9	7	9
Women	16	18	18	15	13	9	8	8	8	22
% Women	55%	67%	67%	65%	59%	53%	47%	47%	53%	71%

Source: Maryland Higher Education Commission Enrollment Information System

Table 12. Trends in Doctoral Enrollments at Maryland Higher Education Institutions
(By Program and Ethnicity)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
African American	8	7	4	5	2	4	5	4	5	3
All Minorities	11	13	7	8	5	11	13	12	12	9
% African American	10%	7%	4%	5%	2%	4%	5%	4%	5%	3%
% All Minorities	13%	13%	8%	8%	5%	11%	12%	12%	11%	9%
Area Studies										
African American	2	1	2	1	2	2	5	6	8	10
All Minorities	3	1	3	2	3	3	6	6	8	13
% African American	3%	2%	3%	1%	3%	3%	7%	8%	10%	12%
% All Minorities	4%	2%	5%	3%	4%	5%	9%	8%	10%	16%
Biological Sciences										
African American	17	21	19	18	28	32	35	30	38	38
All Minorities	75	92	95	87	104	116	131	127	139	150
% African American	2%	2%	2%	2%	3%	3%	3%	3%	4%	3%
% All Minorities	9%	10%	10%	9%	11%	12%	12%	12%	13%	13%
Business										
African American	2	6	4	5	6	5	7	7	7	5
All Minorities	11	15	13	16	16	11	10	11	12	8
% African American	2%	6%	4%	4%	5%	5%	8%	8%	9%	7%
% All Minorities	12%	16%	12%	14%	14%	12%	12%	13%	15%	11%
Communications										
African American	6	6	6	5	4	5	4	3	4	5
All Minorities	8	8	9	6	5	8	6	6	8	8
% African American	7%	9%	8%	8%	6%	8%	7%	5%	7%	9%
% All Minorities	10%	12%	12%	9%	8%	12%	10%	9%	15%	15%
Computer Science										
African American	3	6	8	7	9	8	10	5	7	8
All Minorities	12	15	21	20	23	28	36	28	29	34
% African American	1%	2%	2%	2%	3%	3%	3%	2%	2%	3%
% All Minorities	4%	5%	6%	6%	7%	9%	11%	9%	9%	11%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Education										
African American	157	170	158	160	152	144	158	163	169	162
All Minorities	187	199	189	194	187	181	199	207	213	207
% African American	15%	18%	17%	18%	18%	18%	19%	20%	21%	22%
% All Minorities	18%	21%	20%	22%	22%	22%	24%	25%	27%	28%
Engineering										
African American	9	14	22	23	24	30	35	34	33	32
All Minorities	57	65	77	86	108	125	118	119	117	122
% African American	1%	2%	2%	2%	2%	3%	3%	3%	3%	3%
% All Minorities	7%	7%	8%	9%	10%	12%	11%	11%	11%	11%
Fine Arts										
African American	7	10	9	11	12	11	9	12	11	9
All Minorities	14	17	17	19	25	28	28	35	42	32
% African American	3%	4%	4%	5%	4%	4%	3%	4%	4%	4%
% All Minorities	7%	7%	7%	8%	9%	10%	10%	12%	16%	13%
Foreign Languages										
African American	3	3	3	2	2	3	2	1	0	3
All Minorities	10	11	16	15	14	15	13	13	9	9
% African American	3%	3%	3%	2%	2%	3%	2%	1%	0%	3%
% All Minorities	9%	12%	17%	14%	13%	14%	11%	12%	9%	9%
Health Professions										
African American	20	27	30	28	34	35	39	43	39	40
All Minorities	50	61	66	70	78	93	100	118	114	114
% African American	4%	5%	5%	4%	5%	5%	5%	5%	5%	5%
% All Minorities	9%	10%	10%	10%	11%	12%	13%	15%	14%	14%
Home Economics										
African American	1	1	1	0	0	0	0	0	0	0
All Minorities	3	4	5	3	3	4	2	1	1	1
% African American	2%	2%	2%	0%	0%	0	0%	0%	0%	0%
% All Minorities	6%	9%	11%	9%	11%	19%	14%	10%	11%	25%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Letters										
African American	5	7	6	7	10	19	18	16	15	15
All Minorities	14	15	13	13	24	37	43	39	42	38
% African American	2%	2%	2%	2%	3%	6%	6%	5%	5%	5%
% All Minorities	5%	5%	4%	4%	8%	12%	14%	13%	13%	12%
Library Science										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	1	0	1	1	1
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	6%	0%	6%	6%	7%
Mathematics										
African American	9	3	4	8	12	15	18	20	16	15
All Minorities	20	17	16	23	27	25	26	38	32	31
% African American	3%	1%	1%	3%	4%	5%	6%	6%	6%	6%
% All Minorities	7%	6%	6%	8%	9%	8%	8%	12%	11%	12%
Physical Sciences										
African American	9	9	12	13	15	12	15	10	10	5
All Minorities	33	38	41	46	47	66	67	53	45	33
% African American	1%	1%	2%	2%	2%	2%	2%	2%	2%	1%
% All Minorities	5%	5%	6%	7%	7%	10%	10%	8%	8%	6%
Psychology										
African American	22	26	31	30	38	36	35	30	32	32
All Minorities	36	45	48	46	56	52	51	46	45	48
% African American	8%	9%	10%	10%	12%	12%	12%	10%	11%	11%
% All Minorities	13%	16%	16%	15%	18%	17%	17%	15%	16%	16%
Public Affairs										
African American	12	14	19	14	11	7	8	4	5	8
All Minorities	13	15	22	15	13	11	12	7	6	10
% African American	14%	16%	21%	17%	16%	12%	15%	9%	11%	18%
% All Minorities	15%	17%	24%	18%	19%	18%	22%	15%	13%	23%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Social Sciences										
African American	28	37	39	43	39	46	46	57	72	74
All Minorities	47	65	69	73	71	81	82	95	113	106
% African American	4%	4%	4%	5%	4%	5%	5%	7%	8%	9%
% All Minorities	6%	8%	8%	8%	8%	9%	9%	11%	13%	12%
Theology										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	0	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Interdisciplinary Studies										
African American	0	0	0	0	0	0	0	0	0	2
All Minorities	2	2	1	1	1	1	0	0	0	2
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
% All Minorities	7%	7%	4%	4%	5%	6%	0%	0%	0%	7%

Note: "All Minorities" include African American, Asian American, Hispanic and Native American

Source: Maryland Higher Education Commission Enrollment Information System

Table 13. Trends in Doctoral Enrollments at Maryland Higher Education Institutions (By Program and Citizenship)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
U.S.	52	52	46	44	41	45	48	45	50	46
Foreign	31	46	47	56	61	59	58	57	57	52
% Foreign	37%	47%	51%	56%	60%	57%	55%	56%	53%	53%
Area Studies										
U.S.	66	55	55	63	63	56	63	71	75	72
Foreign	10	9	10	8	7	6	8	6	6	9
% Foreign	13%	14%	15%	11%	10%	10%	11%	8%	7%	11%
Biological Sciences										
U.S.	633	646	676	681	700	730	773	775	784	801
Foreign	211	249	268	291	291	269	285	296	302	328
% Foreign	25%	28%	28%	30%	29%	27%	27%	28%	28%	29%
Business										
U.S.	53	57	59	66	65	51	44	47	47	37
Foreign	43	39	50	51	52	43	39	37	35	37
% Foreign	45%	41%	46%	44%	44%	46%	47%	44%	43%	50%
Communications										
U.S.	72	58	65	57	58	58	52	50	50	48
Foreign	10	7	8	8	9	9	7	6	4	5
% Foreign	12%	11%	11%	12%	13%	13%	12%	11%	7%	9%
Computer Science										
U.S.	149	157	179	174	174	167	163	141	140	148
Foreign	122	135	156	157	143	136	156	160	174	177
% Foreign	45%	46%	47%	47%	45%	45%	49%	53%	55%	55%
Education										
U.S.	980	922	901	848	808	785	803	783	758	698
Foreign	48	43	47	43	42	38	35	34	31	33
% Foreign	5%	5%	5%	5%	5%	5%	4%	4%	4%	5%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
U.S.	389	401	425	460	496	517	505	511	506	513
Foreign	436	493	525	545	580	550	547	559	563	589
% Foreign	53%	55%	55%	54%	54%	52%	52%	52%	53%	53%
Fine Arts										
U.S.	180	190	204	192	211	223	220	212	197	176
Foreign	32	39	40	44	60	59	70	70	72	72
% Foreign	15%	17%	16%	19%	22%	21%	24%	25%	27%	29%
Foreign Languages										
U.S.	67	57	60	68	73	74	78	67	55	59
Foreign	40	34	37	37	39	36	40	46	43	47
% Foreign	37%	37%	38%	35%	35%	33%	34%	41%	44%	44%
Health Professions										
U.S.	435	453	473	493	523	540	556	585	579	584
Foreign	123	148	172	197	205	222	218	215	239	214
% Foreign	22%	25%	27%	29%	28%	29%	28%	27%	29%	27%
Home Economics										
U.S.	35	34	33	24	19	14	9	5	5	2
Foreign	15	9	11	9	8	7	5	5	4	2
% Foreign	30%	21%	25%	27%	30%	33%	36%	50%	44%	50%
Letters										
U.S.	222	255	259	261	271	285	271	263	276	258
Foreign	49	48	46	39	41	32	36	32	43	49
% Foreign	18%	16%	15%	13%	13%	10%	12%	11%	14%	16%
Library Science										
U.S.	12	10	6	9	9	13	10	12	9	8
Foreign	7	7	6	7	3	4	4	4	8	7
% Foreign	37%	41%	50%	44%	25%	24%	29%	25%	47%	47%
Mathematics										
U.S.	157	146	150	150	166	169	181	186	159	152
Foreign	117	121	127	129	135	139	134	125	127	116
% Foreign	43%	45%	46%	46%	45%	45%	43%	40%	44%	43%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Sciences										
U.S.	430	429	406	396	394	429	419	373	347	308
Foreign	263	301	292	299	294	269	278	277	253	279
% Foreign	38%	41%	42%	43%	43%	39%	40%	43%	42%	48%
Psychology										
U.S.	252	263	273	280	288	291	281	281	273	286
Foreign	22	20	27	27	25	23	21	18	16	14
% Foreign	8%	7%	9%	9%	8%	7%	7%	6%	6%	5%
Public Affairs										
U.S.	79	82	83	77	64	59	54	47	46	43
Foreign	8	8	7	5	3	1	0	0	0	1
% Foreign	9%	9%	8%	6%	5%	2%	0%	0%	0%	2%
Social Sciences										
U.S.	593	653	673	682	677	698	676	682	686	643
Foreign	202	211	212	188	204	192	194	196	210	214
% Foreign	25%	24%	24%	22%	23%	22%	22%	22%	23%	25%
Theology										
U.S.	85	45	60	63	31	47	51	9	30	38
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Interdisciplinary Studies										
U.S.	25	23	24	21	20	15	15	14	12	23
Foreign	4	4	3	2	2	2	2	3	3	8
% Foreign	14%	15%	11%	9%	9%	12%	12%	18%	20%	26%

Source: Maryland Higher Education Commission Enrollment Information System

Table 14. Trends in Doctoral Enrollments at Maryland Public Higher Education Institutions (By Program and Residency)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
Maryland	19	23	24	23	22	23	20	22	24	21
Out-of-State	64	75	69	77	80	81	85	80	83	77
% Out-of-State	77%	77%	74%	77%	78%	78%	81%	78%	78%	79%
Area Studies										
Maryland	28	21	24	24	26	23	30	31	39	32
Out-of-State	24	21	19	27	30	27	24	21	18	21
% Out-of-State	46%	50%	44%	53%	54%	54%	44%	40%	32%	40%
Biological Sciences										
Maryland	181	184	188	184	197	191	196	210	220	205
Out-of-State	334	357	396	386	377	393	388	377	370	397
% Out-of-State	65%	66%	68%	68%	66%	67%	66%	64%	63%	66%
Business										
Maryland	22	24	23	25	26	23	23	24	21	13
Out-of-State	73	71	86	91	91	71	60	60	61	61
% Out-of-State	77%	75%	79%	78%	78%	76%	72%	71%	74%	82%
Communications										
Maryland	30	26	26	19	23	22	15	19	15	17
Out-of-State	52	39	47	46	44	45	44	37	39	36
% Out-of-State	63%	60%	64%	71%	66%	67%	75%	66%	72%	68%.
Computer Science										
Maryland	70	86	90	80	90	75	72	60	63	66
Out-of-State	166	182	201	206	181	188	204	192	192	197
% Out-of-State	70%	68%	69%	72%	67%	72%	74%	76%	75%	75%
Education										
Maryland	712	667	669	615	563	540	537	516	494	443
Out-of-State	277	271	259	261	261	258	272	279	271	268
% Out-of-State	28%	29%	28%	30%	32%	32%	34%	35%	35%	38%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
Maryland	117	106	108	121	146	142	137	155	148	146
Out-of-State	410	459	491	522	553	545	533	541	556	567
% Out-of-State	78%	81%	82%	81%	79%	79%	80%	78%	79%	80%
Fine Arts										
Maryland	53	56	59	56	71	62	67	60	62	58
Out-of-State	97	111	110	116	124	147	147	149	152	144
% Out-of-State	65%	67%	65%	67%	64%	70%	69%	71%	71%	71%
Foreign Languages										
Maryland	23	16	22	21	21	13	12	12	12	19
Out-of-State	35	32	35	43	44	42	47	41	34	35
% Out-of-State	60%	67%	61%	67%	68%	76%	80%	77%	74%	65%
Health Professions										
Maryland	48	52	50	55	65	66	63	77	68	69
Out-of-State	86	94	103	116	119	132	134	133	130	124
% Out-of-State	64%	64%	67%	68%	65%	67%	68%	63%	66%	64%
Home Economics										
Maryland	14	13	13	12	10	6	3	1	3	1
Out-of-State	36	30	31	21	17	15	10	9	6	3
% Out-of-State	72%	70%	71%	64%	63%	71%	77%	90%	67%	75%
Letters										
Maryland	96	110	110	103	98	83	69	79	73	67
Out-of-State	97	113	112	116	134	154	161	147	169	161
% Out-of-State	50%	51%	51%	53%	58%	65%	70%	65%	70%	71%
Library Science										
Maryland	7	7	4	6	8	11	9	10	6	5
Out-of-State	12	10	8	9	4	6	5	6	11	10
% Out-of-State	63%	59%	67%	60%	33%	35%	36%	38%	65%	67%
Mathematics										
Maryland	62	58	51	44	50	55	51	51	47	48
Out-of-State	153	152	158	174	187	184	180	181	168	154
% Out-of-State	71%	72%	76%	80%	79%	23%	78%	78%	78%	76%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Sciences										
Maryland	76	80	75	80	89	86	83	69	66	53
Out-of-State	388	404	381	377	383	396	394	375	347	353
% Out-of-State	84%	84%	84%	83%	81%	82%	83%	85%	84%	87%
Psychology										
Maryland	83	80	86	84	91	91	85	65	74	67
Out-of-State	125	135	139	149	148	146	150	149	135	127
% Out-of-State	60%	63%	62%	64%	62%	62%	64%	70%	65%	66%
Public Affairs										
Maryland	47	53	51	47	41	36	36	30	32	28
Out-of-State	40	35	37	34	26	23	17	17	14	16
% Out-of-State	46%	40%	42%	42%	39%	39%	32%	36%	30%	36%
Social Sciences										
Maryland	230	244	239	217	240	251	242	239	259	249
Out-of-State	343	381	381	408	401	398	394	407	396	393
% Out-of-State	60%	61%	62%	65%	63%	61%	62%	63%	61%	61%

Note: These figures are not available for Maryland independent institutions

Source: Maryland Higher Education Commission Enrollment Information System

Table 15. Trends in Doctorates Awarded at Maryland Higher Education Institutions (By Campus)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB	32	42	43	59	59	65	57	72	64	71
UMBC	13	30	27	27	49	34	42	58	57	54
UMCP	393	468	453	506	490	528	480	466	505	474
UMES	1	2	0	1	2	2	3	3	0	3
Morgan	3	3	4	7	5	9	5	3	5	4
All Publics	442	545	527	600	605	638	587	602	631	606
Baltimore Hebrew	0	0	0	0	1	0	0	0	1	0
Johns Hopkins	234	250	295	309	329	285	279	335	341	382
Loyola	4	5	3	9	11	9	9	5	11	3
Ner Israel	1	1	2	3	3	2	2	4	4	4
St. Mary's Seminary	22	15	11	7	-	-	-	-	-	-
All Independents	261	271	311	328	344	296	290	344	327	389
All Campuses	703	816	838	928	949	934	877	946	988	995

Note: Peabody degrees included with Johns Hopkins

Source: Maryland Higher Education Commission Degree Information System

Table 16. Trends In Doctorates Awarded at Maryland Higher Education Institutions (By Campus and Gender)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
Men	11	20	17	23	36	32	21	27	24	23
Women	21	22	26	36	23	33	36	45	40	48
% Women	66%	52%	61%	61%	39%	51%	63%	63%	63%	68%
UMBC										
Men	10	16	12	20	31	23	23	41	30	36
Women	3	14	15	7	18	11	19	17	27	18
% Women	23%	47%	56%	26%	37%	32%	45%	29%	47%	33%
UMCP										
Men	218	267	261	292	278	312	287	277	294	273
Women	175	201	192	214	212	216	193	189	211	201
% Women	45%	43%	42%	42%	43%	41%	40%	41%	42%	42%
UMES										
Men	0	1	0	1	2	1	2	2	0	2
Women	1	1	0	0	0	1	1	1	0	1
% Women	100%	50%	0%	0%	0%	50%	33%	33%	0%	33%
Morgan										
Men	3	2	1	2	1	4	3	2	1	3
Women	0	1	3	5	4	5	2	1	4	1
% Women	0%	33%	75%	71%	80%	56%	40%	33%	80%	25%
All Publics										
Men	242	306	291	338	348	372	336	349	349	337
Women	200	239	236	262	257	266	251	253	282	269
% Women	45%	44%	45%	44%	43%	42%	43%	42%	45%	44%
Baltimore Hebrew										
Men	0	0	0	0	0	0	0	0	0	0
Women	0	0	0	0	1	0	0	0	1	0
% Women	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Johns Hopkins										
Men	142	150	170	202	191	158	162	193	203	221
Women	92	100	125	107	138	127	117	142	138	161
% Women	39%	40%	42%	35%	42%	45%	42%	42%	41%	42%
Loyola										
Men	3	3	3	4	8	7	5	3	5	1
Women	1	2	0	5	3	2	4	2	6	2
% Women	25%	40%	0%	56%	27%	22%	44%	40%	55%	67%
Ner Israel										
Men	1	1	2	3	3	2	2	4	4	4
Women	0	0	0	0	0	0	0	0	0	0
% Women	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Mary's Seminary										
Men	19	13	10	7	-	-	-	-	-	-
Women	3	2	1	0	-	-	-	-	-	-
% Women	14%	13%	9%	0%	-	-	-	-	-	-
All Independents										
Men	165	167	185	216	202	167	169	200	212	226
Women	96	104	126	112	142	129	121	144	145	163
% Women	37%	38%	41%	34%	41%	44%	42%	42%	44%	42%
All Campuses										
Men	407	473	476	554	550	539	505	549	561	563
Women	296	343	362	374	399	395	372	397	427	432
% Women	42%	42%	43%	40%	42%	42%	42%	42%	43%	43%

Note: Peabody degrees included with Johns Hopkins

Source: Maryland Higher Education Commission Degree Information System

Table 17. Trends in Doctorates Awarded at Maryland Higher Education Institutions (By Campus and Ethnicity)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
African American	4	1	0	3	3	3	3	6	2	3
All Minorities	7	4	2	7	7	9	4	9	6	10
% African American	13%	2%	0%	5%	5%	5%	5%	8%	3%	4%
% All Minorities	22%	10%	5%	12%	12%	14%	7%	13%	9%	14%
UMBC										
African American	0	0	0	0	0	1	3	0	3	3
All Minorities	0	2	1	1	2	3	4	0	4	5
% African American	0%	0%	0%	0%	0%	3%	7%	0%	5%	6%
% All Minorities	0%	7%	4%	4%	4%	9%	10%	0%	7%	9%
UMCP										
African American	29	27	19	29	28	29	34	23	34	19
All Minorities	41	41	38	50	52	64	83	52	87	51
% African American	7%	6%	4%	6%	6%	6%	7%	5%	7%	4%
% All Minorities	10%	9%	8%	10%	11%	12%	17%	11%	17%	11%
UMES										
African American	1	0	0	0	0	0	0	1	0	0
All Minorities	1	0	0	0	0	0	0	1	0	0
% African American	100%	0%	0%	0%	0%	0%	0%	33%	0%	0%
% All Minorities	100%	0%	0%	0%	0%	0%	0%	33%	0%	0%
Morgan										
African American	2	2	3	5	3	6	5	1	5	4
All Minorities	2	2	3	5	3	6	5	1	5	4
% African American	67%	67%	75%	71%	60%	67%	100%	33%	100%	100%
% All Minorities	67%	67%	75%	71%	60%	67%	100%	33%	100%	100%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All Publics										
African American	36	30	22	37	34	39	45	31	44	29
All Minorities	51	49	44	63	64	82	96	63	102	70
% African American	8%	6%	4%	6%	6%	6%	8%	5%	7%	5%
% All Minorities	12%	9%	8%	11%	11%	13%	16%	11%	16%	12%
Baltimore Hebrew										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	0	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Johns Hopkins										
African American	5	3	1	4	4	3	6	4	8	12
All Minorities	15	8	11	24	21	25	21	32	31	37
% African American	2%	1%	*	1%	1%	1%	2%	1%	2%	3%
% All Minorities	6%	3%	4%	8%	6%	9%	8%	10%	9%	10%
Loyola										
African American	0	0	0	0	0	0	0	0	2	1
All Minorities	0	0	0	0	0	0	0	0	2	1
% African American	0%	0%	0%	0%	0%	0%	0%	0%	18%	33%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	18%	33%
Ner Israel										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	0	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Mary's Seminary										
African American	3	0	0	0	-	-	-	-	-	-
All Minorities	3	0	0	0	-	-	-	-	-	-
% African American	14%	0%	0%	0%	-	-	-	-	-	-
% All Minorities	14%	0%	0%	0%	-	-	-	-	-	-

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All Independents										
African American	8	3	1	4	4	3	6	4	10	13
All Minorities	18	8	11	24	21	25	21	32	33	38
% African American	3%	1%	*	1%	1%	1%	2%	1%	3%	3%
% All Minorities	7%	3%	4%	7%	6%	8%	7%	9%	10%	10%
All Campuses										
African American	44	33	23	41	38	42	51	35	54	42
All Minorities	69	57	55	87	85	107	117	95	135	108
% African American	6%	4%	3%	4%	4%	5%	6%	4%	6%	4%
% All Minorities	10%	7%	7%	9%	9%	12%	13%	10%	14%	11%

* Less than 0.5 percent

Note: Peabody degrees included with Johns Hopkins. "All minorities" include African American, Asian American, Hispanic and Native American.

Source: Maryland Higher Education Commission Degree Information System

Table 18. Trends in Doctorates Awarded at Maryland Higher Education Institutions (By Campus and Citizenship)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
UMB										
U.S.	28	41	36	42	45	44	36	52	39	56
Foreign	4	1	7	17	14	21	21	20	25	15
% Foreign	13%	2%	16%	29%	24%	32%	37%	28%	39%	21%
UMBC										
U.S.	9	21	18	13	27	16	28	25	34	27
Foreign	4	9	9	14	22	18	14	33	23	27
% Foreign	31%	30%	33%	52%	45%	53%	33%	57%	40%	50%
UMCP										
U.S.	296	344	323	348	328	344	325	314	358	331
Foreign	97	124	130	158	162	184	155	152	147	143
% Foreign	25%	27%	29%	31%	33%	35%	32%	33%	29%	30%
UMES										
U.S.	1	1	0	1	0	1	1	1	0	3
Foreign	0	1	0	0	2	1	2	2	0	0
% Foreign	0%	50%	0%	0%	100%	50%	67%	67%	0%	0%
Morgan										
U.S.	2	2	4	7	5	9	5	3	5	4
Foreign	1	1	0	0	0	0	0	0	0	0
% Foreign	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%
All Publics										
U.S.	336	409	381	411	405	414	395	396	436	421
Foreign	106	136	146	189	200	224	192	206	195	185
% Foreign	24%	25%	28%	32%	33%	35%	33%	34%	31%	31%
Baltimore Hebrew										
U.S.	0	0	0	0	1	0	0	0	1	0
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Johns Hopkins										
U.S.	181	187	207	227	229	206	197	233	240	272
Foreign	53	63	88	82	100	79	82	102	101	110
% Foreign	23%	25%	30%	27%	30%	28%	29%	30%	30%	29%
Loyola										
U.S.	4	5	3	7	10	7	7	4	8	2
Foreign	0	0	0	2	1	2	2	1	3	1
% Foreign	0%	0%	0%	22%	9%	22%	22%	20%	27%	33%
Ner Israel										
U.S.	1	1	2	3	3	2	2	4	4	4
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Mary's Seminary										
U.S.	22	15	11	7	-	-	-	-	-	-
Foreign	0	0	0	0	-	-	-	-	-	-
% Foreign	0%	0%	0%	0%	-	-	-	-	-	-
All Independents										
U.S.	208	208	223	244	243	215	206	241	223	278
Foreign	53	63	88	84	101	81	84	103	104	111
% Foreign	20%	23%	28%	26%	29%	27%	29%	30%	32%	29%
All Campuses										
U.S.	544	617	604	655	648	629	601	637	689	699
Foreign	159	199	234	273	301	305	276	309	299	296
% Foreign	23%	24%	28%	29%	32%	33%	32%	33%	30%	30%

Note: Peabody degrees included with Johns Hopkins

Source: Maryland Higher Education Commission Degree Information System

Table 19. Trends in Doctorates Awarded at Maryland Higher Education Institutions
(By Program)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture	18	14	15	9	13	15	15	19	12	13
Area Studies	1	4	8	6	13	11	2	8	5	5
Biological Sciences	91	123	125	125	134	138	132	144	148	156
Business	8	9	8	10	19	16	18	12	13	15
Communications	1	8	10	6	9	7	4	9	5	12
Computer Science	13	30	18	27	34	28	29	24	31	23
Education	124	133	133	145	134	136	110	86	107	105
Engineering	83	84	97	90	138	137	152	150	143	148
Fine Arts	16	19	30	33	29	39	22	46	38	53
Foreign Languages	10	14	4	11	13	8	12	10	17	13
Health Professions	81	86	82	104	99	86	100	123	126	130
Home Economics	6	8	9	9	7	9	5	2	1	3
Letters	17	21	23	29	25	27	30	24	33	25
Library Science	3	1	4	0	2	2	3	0	1	1
Mathematics	20	23	37	42	24	30	22	30	31	38
Physical Sciences	61	83	89	115	86	85	88	109	107	99
Psychology	36	29	41	31	36	36	32	34	55	33
Public Affairs	12	5	10	11	15	15	7	12	6	11
Social Sciences	75	106	78	115	110	102	85	97	101	104
Theology	23	16	13	10	4	2	2	4	5	4
Interdisciplinary Studies	4	0	4	0	5	5	7	3	3	4

Source: Maryland Higher Education Commission Degree Information System

Table 20. Trends In Doctorates Awarded at Maryland Higher Education Institutions (By Program and Gender)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
Men	14	8	13	5	9	11	10	13	8	9
Women	4	6	2	4	4	4	5	6	4	4
% Women	22%	43%	13%	44%	31%	27%	33%	32%	33%	31%
Area Studies										
Men	0	0	3	3	7	4	1	5	2	2
Women	1	4	5	3	6	7	1	3	3	3
% Women	100%	100%	63%	50%	46%	64%	50%	38%	60%	60%
Biological Sciences										
Men	56	69	70	78	82	72	75	78	83	85
Women	35	54	55	47	52	66	57	66	65	71
% Women	39%	44%	44%	38%	39%	48%	43%	46%	44%	46%
Business										
Men	6	4	7	8	13	10	12	8	11	8
Women	2	5	1	2	6	6	6	4	2	7
% Women	25%	56%	13%	20%	32%	38%	33%	33%	15%	47%
Communications										
Men	0	4	5	3	3	5	2	6	2	4
Women	1	4	5	3	6	2	2	3	3	8
% Women	100%	50%	50%	50%	67%	29%	50%	33%	60%	67%
Computer Science										
Men	12	26	16	24	30	23	24	20	25	20
Women	1	4	2	3	4	5	5	4	6	3
% Women	8%	13%	11%	11%	12%	18%	17%	17%	19%	13%
Education										
Men	46	45	42	40	42	46	38	20	33	27
Women	78	88	91	105	92	90	72	66	74	78
% Women	63%	66%	68%	72%	69%	66%	66%	77%	69%	74%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
Men	77	78	79	81	124	117	130	125	120	128
Women	6	6	18	9	14	20	22	25	23	20
% Women	7%	7%	19%	10%	10%	15%	15%	17%	16%	14%
Fine Arts										
Men	7	10	17	22	12	20	12	18	16	25
Women	9	9	13	11	17	19	10	28	22	28
% Women	56%	47%	43%	33%	59%	49%	46%	61%	58%	53%
Foreign Languages										
Men	1	4	0	3	2	2	5	3	5	7
Women	9	10	4	8	11	6	7	7	12	6
% Women	90%	71%	100%	73%	85%	75%	58%	70%	71%	46%
Health Professions										
Men	27	31	37	50	44	33	37	54	51	46
Women	54	55	45	54	55	53	63	69	75	84
% Women	67%	64%	55%	52%	56%	60%	63%	56%	60%	65%
Home Economics										
Men	0	4	2	1	1	1	1	1	0	1
Women	6	4	7	8	6	8	4	1	1	2
% Women	100%	50%	78%	89%	86%	89%	80%	50%	100%	67%
Letters										
Men	11	10	8	14	10	11	13	11	12	11
Women	6	11	15	15	15	16	17	13	21	14
% Women	35%	52%	65%	52%	60%	59%	57%	54%	64%	56%
Library Science										
Men	0	0	2	0	1	2	0	0	0	0
Women	3	1	2	0	1	0	3	0	1	1
% Women	100%	100%	50%	0%	50%	0%	100%	0%	100%	100%
Mathematics										
Men	17	19	30	35	20	20	17	25	25	24
Women	3	4	7	7	4	10	5	5	6	14
% Women	15%	17%	19%	17%	17%	33%	23%	17%	19%	37%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Science										
Men	44	69	66	97	67	70	58	85	81	81
Women	17	14	23	18	19	15	30	24	26	18
% Women	28%	17%	26%	16%	22%	18%	34%	22%	24%	18%
Psychology										
Men	14	10	13	13	16	17	11	8	21	14
Women	22	19	28	18	20	19	21	26	34	19
% Women	61%	66%	68%	58%	56%	53%	66%	77%	62%	58%
Public Affairs										
Men	4	2	2	3	7	5	2	5	1	3
Women	8	3	8	8	8	10	5	7	5	8
% Women	33%	60%	80%	73%	53%	67%	71%	58%	83%	73%
Social Sciences										
Men	49	66	51	64	55	64	52	60	59	62
Women	26	40	27	51	55	38	33	37	42	42
% Women	35%	38%	35%	44%	50%	37%	39%	38%	42%	40%
Theology										
Men	20	14	12	10	3	2	2	4	4	4
Women	3	2	1	0	1	0	0	0	1	0
% Women	13%	13%	8%	0%	25%	0%	0%	0%	20%	0%
Interdisciplinary Studies										
Men	2	0	1	0	2	4	3	0	2	2
Women	2	0	3	0	3	1	4	3	1	2
% Women	50%	0%	75%	0%	60%	20%	57%	100%	33%	50%

Source: Maryland Higher Education Commission Degree Information System

Table 21. Trends in Doctorates Awarded at Maryland Higher Education Institutions (By Program and Ethnicity)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
African American	0	2	0	0	3	1	0	1	0	0
All Minorities	0	2	2	1	4	2	3	1	2	1
% African American	0%	14%	0%	0%	23%	7%	0%	5%	0%	0%
% All Minorities	0%	14%	15%	11%	31%	13%	20%	5%	17%	8%
Area Studies										
African American	0	0	0	1	0	0	1	0	0	0
All Minorities	0	0	0	1	0	1	1	0	0	0
% African American	0%	0%	0%	17%	0%	0%	50%	0%	0%	0%
% All Minorities	0%	0%	0%	17%	0%	9%	50%	0%	0%	0%
Biological Sciences										
African American	1	3	1	3	2	2	1	3	2	5
All Minorities	3	5	9	19	13	21	8	13	19	15
% African American	1%	2%	1%	2%	2%	1%	1%	2%	1%	3%
% All Minorities	3%	4%	7%	15%	10%	15%	6%	9%	13%	10%
Business										
African American	0	1	0	0	0	0	1	1	1	1
All Minorities	0	1	0	1	3	2	3	2	2	2
% African American	0%	11%	0%	0%	0%	0%	6%	8%	8%	7%
% All Minorities	0%	11%	0%	10%	16%	13%	17%	17%	15%	13%
Communications										
African American	0	0	0	0	2	0	0	2	0	0
All Minorities	0	0	0	0	3	0	0	2	0	1
% African American	0%	0%	0%	0%	22%	0%	0%	22%	0%	0%
% All Minorities	0%	0%	0%	0%	33%	0%	0%	22%	0%	8%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Computer Science										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	1	0	0	0	0	1	1	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	6%	0%	0%	0%	0%	4%	3%	0%
Education										
African American	21	19	14	21	16	27	23	13	26	15
All Minorities	23	20	18	24	24	32	29	13	29	18
% African American	17%	14%	11%	15%	12%	20%	21%	15%	24%	14%
% All Minorities	19%	15%	14%	17%	18%	24%	26%	15%	27%	17%
Engineering										
African American	0	0	0	0	1	2	3	3	6	1
All Minorities	4	4	5	3	9	11	18	11	20	16
% African American	0%	0%	0%	0%	1%	2%	2%	2%	4%	1%
% All Minorities	5%	5%	5%	3%	7%	8%	12%	7%	14%	11%
Fine Arts										
African American	0	0	1	0	0	0	3	0	1	1
All Minorities	1	1	1	2	3	0	3	2	4	9
% African American	0%	0%	3%	0%	0%	0%	14%	0%	3%	2%
% All Minorities	6%	5%	3%	6%	10%	0%	14%	4%	11%	17%
Foreign Languages										
African American	0	0	0	1	0	0	0	1	0	0
All Minorities	2	1	0	1	1	0	1	1	4	2
% African American	0%	0%	0%	9%	0%	0%	0%	10%	0%	0%
% All Minorities	20%	7%	0%	9%	8%	0%	8%	10%	24%	15%
Health Professions										
African American	6	1	1	7	3	2	4	4	8	6
All Minorities	9	6	6	14	6	13	10	18	14	21
% African American	7%	1%	1%	7%	3%	2%	4%	3%	6%	5%
% All Minorities	11%	7%	7%	14%	6%	15%	10%	15%	11%	16%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Home Economics										
African American	0	0	0	0	1	0	0	0	0	0
All Minorities	1	0	0	1	1	1	1	1	0	0
% African American	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%
% All Minorities	17%	0%	0%	11%	14%	11%	20%	50%	0%	0%
Letters										
African American	1	1	0	2	0	0	1	0	0	1
All Minorities	1	2	0	3	1	0	3	3	2	3
% African American	6%	5%	0%	7%	0%	0%	3%	0%	0%	4%
% All Minorities	6%	10%	0%	10%	4%	0%	10%	13%	6%	12%
Library Science										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	0	1	0	0	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	0%	33%	0%	0%	0%
Mathematics										
African American	1	2	1	0	0	0	0	0	1	1
All Minorities	1	3	1	1	0	1	2	1	3	3
% African American	5%	9%	3%	0%	0%	0%	0%	0%	3%	3%
% All Minorities	5%	13%	3%	2%	0%	3%	9%	3%	10%	3%
Physical Sciences										
African American	0	0	0	1	0	1	4	2	2	1
All Minorities	4	4	1	2	4	10	17	11	18	6
% African American	0%	0%	0%	1%	0%	1%	5%	2%	2%	1%
% All Minorities	7%	5%	1%	2%	5%	12%	19%	10%	17%	6%
Psychology										
African American	3	0	4	3	0	2	5	2	4	5
All Minorities	5	2	5	7	1	2	7	5	11	6
% African American	8%	0%	10%	10%	0%	6%	16%	6%	7%	15%
% All Minorities	14%	7%	12%	23%	3%	6%	22%	15%	20%	18%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Public Affairs										
African American	3	1	0	1	2	2	0	2	0	1
All Minorities	5	1	0	1	3	2	0	2	2	2
% African American	25%	20%	0%	9%	13%	13%	0%	17%	0%	9%
% All Minorities	42%	20%	0%	9%	20%	13%	0%	17%	33%	18%
Social Sciences										
African American	5	3	1	1	8	3	5	1	3	4
All Minorities	6	5	6	6	9	8	10	8	3	5
% African American	7%	3%	1%	1%	7%	3%	6%	1%	3%	4%
% All Minorities	8%	5%	8%	5%	8%	8%	12%	8%	3%	5%
Theology										
African American	3	0	0	0	0	0	0	0	0	0
All Minorities	3	0	0	0	0	0	0	0	0	0
% African American	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Interdisciplinary Studies										
African American	0	0	0	0	0	0	0	0	0	0
All Minorities	0	0	0	0	0	1	0	0	1	0
% African American	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% All Minorities	0%	0%	0%	0%	0%	20%	0%	0%	33%	0%

Note: "All Minorities" include African American, Asian American, Hispanic and Native American

Source: Maryland Higher Education Commission Degree Information System

Table 22. Trends in Doctorates Awarded at Maryland Higher Education Institutions
(By Program and Citizenship)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture										
U.S.	10	9	9	8	9	8	8	8	5	7
Foreign	8	5	6	1	4	7	7	11	7	6
% Foreign	44%	36%	40%	11%	31%	47%	47%	58%	58%	46%
Area Studies										
U.S.	1	4	8	6	12	8	2	7	5	4
Foreign	0	0	0	0	1	3	0	1	0	1
% Foreign	0%	0%	0%	0%	8%	27%	0%	13%	0%	20%
Biological Sciences										
U.S.	81	102	97	95	100	94	88	103	98	117
Foreign	10	21	28	30	34	44	44	41	50	39
% Foreign	11%	17%	22%	24%	25%	32%	33%	29%	34%	25%
Business										
U.S.	5	6	3	5	14	5	11	6	7	9
Foreign	3	3	5	5	5	11	7	6	6	6
% Foreign	38%	33%	62%	50%	26%	69%	39%	50%	46%	40%
Communications										
U.S.	1	8	7	5	8	6	3	8	3	9
Foreign	0	0	3	1	1	1	1	1	2	3
% Foreign	0%	0%	30%	17%	11%	14%	25%	11%	40%	25%
Computer Science										
U.S.	5	12	10	10	15	13	14	11	15	10
Foreign	8	18	8	17	19	15	15	13	16	13
% Foreign	62%	60%	44%	63%	56%	54%	52%	54%	52%	57%
Education										
U.S.	118	128	125	135	129	128	105	80	99	98
Foreign	6	5	8	10	5	8	5	6	8	7
% Foreign	5%	4%	6%	7%	4%	6%	5%	7%	8%	7%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Engineering										
U.S.	42	38	43	34	55	56	67	68	71	63
Foreign	41	46	54	56	83	81	85	82	72	85
% Foreign	49%	55%	56%	62%	60%	59%	56%	55%	50%	57%
Fine Arts										
U.S.	14	16	25	29	24	35	19	36	29	43
Foreign	2	3	5	4	5	4	3	10	9	10
% Foreign	13%	16%	17%	12%	17%	10%	14%	22%	24%	19%
Foreign Languages										
U.S.	7	10	3	7	11	7	5	7	10	13
Foreign	3	4	1	4	2	1	7	3	7	0
% Foreign	30%	29%	25%	36%	15%	13%	58%	30%	41%	0%
Health Professions										
U.S.	66	68	57	75	64	53	71	81	89	91
Foreign	15	16	25	29	35	33	29	42	37	39
% Foreign	19%	19%	31%	28%	35%	38%	29%	34%	29%	30%
Home Economics										
U.S.	3	5	4	6	6	7	4	2	1	2
Foreign	3	3	5	3	1	2	1	0	0	1
% Foreign	50%	38%	56%	33%	14%	22%	20%	0%	0%	33%
Letters										
U.S.	14	16	19	26	19	19	26	21	30	24
Foreign	3	5	4	3	6	8	4	3	3	1
% Foreign	18%	24%	17%	10%	24%	30%	13%	13%	9%	4%
Library Science										
U.S.	3	1	3	0	1	0	3	0	1	1
Foreign	0	0	1	0	1	2	0	0	0	0
% Foreign	0%	0%	25%	0%	50%	100%	0%	0%	0%	0%
Mathematics										
U.S.	12	11	22	18	9	15	8	13	17	21
Foreign	8	12	15	24	15	15	14	17	14	17
% Foreign	40%	52%	41%	57%	63%	50%	64%	57%	45%	45%

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physical Sciences										
U.S.	31	56	53	64	49	52	60	64	65	62
Foreign	30	27	36	51	37	33	28	45	42	37
% Foreign	49%	33%	40%	44%	43%	39%	32%	41%	39%	37%
Psychology										
U.S.	33	27	36	27	29	32	28	31	50	28
Foreign	3	2	5	4	7	4	4	3	5	5
% Foreign	8%	7%	12%	13%	19%	11%	13%	9%	9%	15%
Public Affairs										
U.S.	12	5	10	10	15	13	6	12	6	11
Foreign	0	0	0	1	0	2	1	0	0	0
% Foreign	0%	0%	0%	9%	0%	13%	14%	0%	0%	0%
Social Sciences										
U.S.	59	79	53	85	72	73	65	72	80	78
Foreign	16	27	25	30	38	29	20	25	21	26
% Foreign	21%	26%	32%	26%	35%	28%	24%	26%	21%	25%
Theology										
U.S.	23	16	13	10	4	2	2	4	5	4
Foreign	0	0	0	0	0	0	0	0	0	0
% Foreign	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Interdisciplinary Studies										
U.S.	4	0	4	0	3	3	6	3	3	4
Foreign	0	0	0	0	2	2	1	0	0	0
% Foreign	0%	0%	0%	0%	40%	40%	14%	0%	0%	0%

Source: Maryland Higher Education Commission Degree Information System

Table 23. Trends In Doctorates Awarded, Maryland and Nationally

	Maryland	National
1970	576	29,498
1971	552	31,867
1972	624	33,041
1973	623	33,755
1974	578	33,047
1975	649	32,952
1976	612	32,946
1977	611	31,716
1978	577	30,875
1979	587	31,239
1980	529	31,020
1981	594	31,356
1982	594	31,111
1983	598	31,281
1984	657	31,337
1985	696	31,297
1986	663	31,902
1987	682	32,370
1988	705	33,500
1989	703	34,327
1990	816	36,067
1991	838	37,534
1992	928	38,890
1993	949	39,801
1994	934	41,034
1995	877	41,743
1996	946	42,415
1997	988	42,705
% Change 1991-1997	18%	14%
% Change 1980-1997	66%	36%
% Change 1970-1997	72%	45%

Sources: Maryland Higher Education Commission Degree Information System, Trends in Degrees Awarded by Maryland Public and Private Colleges at Universities (Maryland State Board for Higher Education, 1983), Maryland Higher Education Planning Statistics 1971 (Maryland Council for Higher Education, 1971), Doctorate Recipients from United States Universities (National Research Council, 1999)

Table 24. Trends in Doctorates Awarded, Maryland and Nationally (By Selected Programs)

	1971	1976	1981	1986	1991	1997	71-97 % change
Agriculture							
Maryland	18	11	9	13	15	12	-33%
National	1,073	950	1,151	1,157	1,242	1,102	3%
Biological Sciences							
Maryland	69	62	60	88	125	148	115%
National	3,654	3,573	3,803	3,807	4,650	5,717	57%
Business							
Maryland	3	5	8	9	8	13	333%
National	673	739	624	902	1,163	1,221	81%
Communications							
Maryland	0	0	0	5	10	5	-
National	37	295	240	258	332	325	778%
Computer Science							
Maryland	0	7	9	12	18	31	-
National	NA	NA	232	399	800	889	-
Education							
Maryland	98	145	153	133	133	107	9%
National	6,435	7,725	7,497	6,649	6,454	6,497	1%
Engineering							
Maryland	64	37	29	48	97	143	123%
National	3,498	2,834	2,528	3,376	5,214	6,052	73%
Foreign Languages							
Maryland	11	19	19	11	4	17	55%
National	728	835	576	445	498	653	-10%

	1971	1976	1981	1986	1991	1997	71-97 % change
Letters							
Maryland	50	23	25	21	23	33	-34%
National	2,856	2,951	2,483	2,453	2,938	3,780	32%
Mathematics							
Maryland	28	15	11	20	37	31	11%
National	1,238	1,003	728	729	1,039	1,112	-10%
Physical Sciences							
Maryland	81	85	68	70	89	107	32%
National	4,501	3,506	3,210	3,679	4,441	4,573	2%
Psychology							
Maryland	15	28	26	27	41	55	267%
National	2,145	2,883	3,358	3,126	3,250	3,487	63%
Social Sciences							
Maryland	74	99	72	75	78	101	37%
National	4,108	4,426	3,475	3,330	3,565	4,384	7%

Note: The categorization of history in the national figures was changed from letters to social sciences to conform with the Maryland data.

Source: Maryland Higher Education Commission Degree Information System, Trends in Degrees Awarded by Maryland Public and Private Colleges and Universities (Maryland State Board for Higher Education, 1983), Doctorate Recipients from United States Universities (National Research Council, 1998 and 1999)

Table 25. Trends in Doctorates Awarded, Maryland and Nationally (By Gender, Race/Ethnicity, and Citizenship)

	1976	1981	1986	1991	1997	76-97 % change
Gender						
Men						
Maryland	455	371	392	476	561	23%
National	25,262	21,464	20,595	23,661	24,999	-1%
Women						
Maryland	157	223	271	362	427	172%
National	7,684	9,892	11,307	13,873	17,322	125%
Race/Ethnicity						
African American						
Maryland	20	18	34	23	54	170%
National	1,092	1,013	830	1,010	1,335	22%
Asian American						
Maryland	9	5	12	23	61	578%
National	334	465	533	789	1,328	298%
Hispanic						
Maryland	5	6	6	9	19	280%
National	351	466	572	731	735	109%
Native American						
Maryland	4	2	4	0	1	-75%
National	40	85	93	130	166	315%
All Minorities						
Maryland	38	31	56	55	135	255%
National	1,817	2,029	2,034	2,660	3,564	96%
Whites						
Maryland	465	466	444	542	546	17%
National	24,373	21,980	20,640	22,425	23,021	-6%
Citizenship						
U.S.						
Maryland	538	530	536	604	689	28%
National	27,269	25,060	23,086	25,573	27,668	2%
Foreign						
Maryland	74	64	127	234	299	304%
National	5,023	5,221	6,709	11,168	11,390	127%

Sources: Maryland Higher Education Commission Degree Information System,
Doctorate Recipients from United States Universities (National Research Council, 1998 and 1999)

Table 26. Comparison Between Respondent Group and All Doctoral Degree Recipients in Terms of University Attended

	Respondent Group (N = 1,337)	Total Doctorates (N = 4,490)
UMB	5.2%	6.8%
UMBC	4.9%	4.6%
UMCP	52.2%	54.2%
Morgan	0.8%	0.6%
Johns Hopkins	36.9%	33.7%
	(100%)	(100%)

Source: Follow - up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996, Maryland Higher Education Commission Degree Information System

Table 27. Comparison Between Respondent Group and All Doctoral Degree Recipients in Terms of Major Academic Program

	Respondent Group N = 1,337	Total Doctorates (N = 4,490)
Agriculture	1.1%	1.6%
Area Studies	1.2%	0.9%
Biological Sciences	10.9%	14.7%
Business	1.4%	1.7%
Communications	0.6%	0.8%
Computer Science	2.7%	3.2%
Education	19.1%	13.6%
Engineering	12.6%	14.9%
Fine Arts	4.6%	2.2%
Foreign Languages	1.3%	1.2%
Health Professions	11.5%	11.4%
Home Economics	1.1%	0.7%
Letters	3.8%	3.0%
Library Science	0.2%	0.2%
Mathematics	1.8%	3.3%
Physical Sciences	8.1%	10.8%
Psychology	3.9%	2.8%
Public Affairs	1.8%	1.3%
Social Sciences	11.8%	11.3%
Interdisciplinary Studies	0.2%	0.4%
	(100%)	(100%)

Source: Follow - up survey of Doctoral Degree Recipients from the Classes of 1992 to 1996, Maryland Higher Education Commission Degree Information System.

Table 28. Comparison Between Respondent Group and All Doctoral Degree Recipients in Terms of Gender

	Respondent Group (N = 1,337)	Total Doctorates (N = 4,490)
Men	50%	58%
Women	50%	42%
	(100%)	(100%)

Table 29. Comparison Between Respondent Group and Doctoral Degree Recipients from Public Campuses in Terms of Race/Ethnicity

	Respondent Group (N = 832)	Total Doctorates (N= 3,021)
African American	6.3%	6.1%
White	71.5%	53.4%
Foreign	15.0%	33.2%
Other	7.2%	7.2%
	(100%)	(100%)

NOTE: Figures from Johns Hopkins University are not included, because its alumni database does not capture graduates on the basis on every racial/ethnic category.

SOURCE: Follow - up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996, Maryland Higher Education Commission Degree Information System.

Table 30. Current Employment Status of Doctoral Degree Recipients (By Graduation Year)

	N	Employed Full-Time	Employed PT Seeking FT	Employed PT Not Seeking FT	Unemployed	Not Seeking Employment	
1992	317	88%	2%	6%	1.6%	3%	(100%)
1993	261	84%	3%	7%	3.1%	3%	(100%)
1994	318	88%	4%	5%	1.6%	2%	(100%)
1995	260	90%	2%	6%	1.2%	1%	(100%)
1996	168	89%	4%	5%	1.8%	0%	(100%)
All Years	1,324	88%	3%	6%	1.8%	2%	(100%)

Table 31. Current Place of Employment of Doctoral Degree Recipients Employed Full-Time (By Graduation Year)

	N	Maryland	DC	Neighboring State	Other State	Other Country	
1992	273	40%	6%	17%	36%	1%	(100%)
1993	216	42%	10%	14%	32%	2%	(100%)
1994	276	34%	11%	15%	38%	2%	(100%)
1995	230	39%	10%	16%	32%	3%	(100%)
1996	148	37%	10%	14%	38%	1%	(100%)
All Years	1,143	38%	9%	16%	35%	2%	(100%)

SOURCE: Follow - up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 32. Type of Current Employer of Doctoral Degree Recipients Employed Full-Time (By Graduation Year)

	1992 (N=276)	1993 (N=214)	1994 (N=275)	1995 (N=229)	1996 (N=149)	All Years (N=1143)
Business/Industry	18%	18%	20%	18%	17%	19%
Elementary/Secondary School	7%	4%	4%	6%	4%	5%
Community College	1%	5%	2%	2%	2%	2%
Four-Year College or University	42%	43%	38%	42%	42%	41%
Federal Government Agency	12%	13%	11%	11%	8%	11%
State or Local Government Agency	3%	2%	2%	3%	3%	2%
Military	2%	1%	2%	4%	1%	2%
Hospital or Health Related Facility	3%	6%	6%	7%	9%	6%
Other Non-Profit Organization	6%	4%	6%	4%	8%	5%
Self-Employed	3%	2%	4%	3%	3%	3%
Other	3%	2%	6%	1%	2%	3%
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 33. Current Job of Doctoral Degree Recipients Employed Full-Time (By Graduation Year)

	1992 (N=271)	1993 (N=215)	1994 (N=274)	1995 (N=231)	1996 (N=147)	All Years (N=1138)
Advertising/Public Relations	-	1%	-	-	-	*
Computer Programmer/Analyst	2%	2%	2%	1%	1%	2%
Computer Engineer	3%	3%	3%	2%	1%	2%
Education Administration/Counselor	6%	5%	4%	7%	2%	5%
Educator	33%	35%	27%	29%	25%	30%
Engineer	6%	8%	8%	7%	10%	8%
Executive/Administrator	4%	3%	4%	4%	3%	4%
Financial Services Prof.	-	1%	*	*	1%	*
Health Care Prof.	3%	2%	3%	4%	5%	3%
Mental Health Care Provider	2%	5%	2%	4%	4%	3%
Legal Services/Law Enforcement	-	1%	2%	-	1%	1%
Personnel Prof.	*	-	1%	-	-	*
Postdoctoral Fellow	4%	2%	8%	7%	11%	6%
Research Analyst/Research Asst.	3%	4%	2%	3%	3%	3%
Sales or Marketing Prof.	*	-	1%	-	-	*
Scientist, Life Sciences	11%	9%	8%	13%	8%	10%
Scientist, Physical Sciences	10%	6%	7%	5%	8%	7%
Scientist, Social Sciences/ Policy Analyst	5%	4%	7%	6%	8%	6%
Statistician	2%	-	1%	*	2%	1%
Social Services Professional	-	1%	*	1%	-	*
Visual Artist/Performing Artist/Entertainer/Athlete	-	-	*	*	1%	*
Writer/Journalist/Public Information Specialist	-	-	2%	1%	-	1%
Nonprofessional	-	-	1%	*	-	*
Other	7%	8%	8%	5%	6%	7%
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)

* Less than 0.5 percent

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Class of 1992 to 1996.

Table 34. Median Annual Salary of Doctoral Degree Recipients Employed Full-Time (By Graduation Year)

	N	Median Salary
1992	268	$58,750
1993	210	$57,500
1994	268	$53,250
1995	224	$55,610
1996	146	$51,880
All Years	1,116	$56,200

Table 35. Perception of Graduates Employed Full-Time of How Well Doctoral Studies Prepared Them for Their Current Job (By Graduation Year)

	N	Excellent	Good	Adequate	Inadequate	[redacted]
1992	262	46%	37%	15%	3%	(100%)
1993	204	42%	40%	16%	3%	(100%)
1994	261	44%	39%	13%	4%	(100%)
1995	210	47%	40%	12%	1%	(100%)
1996	139	50%	37%	10%	3%	(100%)
All Years	1,076	45%	39%	14%	3%	(100%)

SOURCE: Follow - up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 36. Relationship Between the Job of Graduates Employed Full- Time and Their Doctoral Major (By Graduation Year)

	N	Directly Related	Somewhat Related	Not Related	
1992	268	70%	26%	5%	(100%)
1993	209	70%	23%	7%	(100%)
1994	269	68%	23%	9%	(100%)
1995	218	65%	29%	6%	(100%)
1996	135	70%	25%	4%	(100%)
All Years	1,099	69%	25%	6%	(100%)

Table 37. Percentage of Graduates Employed Full-Time Who Needed a Doctoral Degree to Obtain Their Current Job (By Graduation Year)

	N	Yes	No	
1992	276	63%	37%	(100%)
1993	219	64%	36%	(100%)
1994	279	61%	39%	(100%)
1995	232	61%	39%	(100%)
1996	150	65%	35%	(100%)
All Years	1,156	63%	37%	(100%)

SOURCE: Follow - up Survey of Doctoral Classes of 1992 to 1996.

Table 38. "If I were to Do It Over, I would Choose the Same Doctoral Field Again"
(By Graduation Year)

	N	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	
1992	308	49%	26%	15%	7%	3%	(100%)
1993	251	43%	28%	20%	7%	2%	(100%)
1994	308	39%	28%	21%	6%	6%	(100%)
1995	245	42%	27%	21%	8%	3%	(100%)
1996	153	43%	27%	23%	6%	1%	(100%)
All Years	1,265	43%	27%	20%	7%	4%	(100%)

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 39. Current Employment Status of Doctoral Degree Recipients (By Campus)

	N	Employed Full - Time	Employed PT Seeking FT	Employed PT Not Seeking FT	Unemployed	Not Seeking Employment	[redacted]
UMB	68	91%	4%	3%	1.5%	0%	(100%)
UMBC	62	92%	0%	5%	1.6%	2%	(100%)
UMCP	691	85%	4%	7%	1.3%	3%	(100%)
Morgan	11	82%	0%	0%	9.1%	9%	(100%)
Johns Hopkins	492	90%	2%	4%	2.4%	1%	(100%)

SOURCE: Follow - up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 40. Type of Current Employer of Doctoral Degree Recipients Employed Full-Time (By Campus)

	UMB (N=62)	UMBC (N=55)	UMCP (N=577)	Morgan (N=9)	Johns Hopkins (N=440)
Business/Industry	13%	18%	22%	-	15%
Elementary/Secondary School	2%	-	8%	33%	2%
Community College	2%	2%	4%	-	*
Four-Year College or University	45%	33%	38%	22%	46%
Federal Government Agency	15%	15%	11%	-	11%
State or Local Government Agency	2%	9%	2%	33%	1%
Military	2%	-	3%	-	2%
Hospital or Health-Related Facility	10%	11%	2%	-	9%
Other Non-Profit Organization	3%	2%	4%	-	8%
Self-Employed	7%	6%	3%	11%	2%
Other	2%	6%	3%	-	3%
	(100%)	(100%)	(100%)	(100%)	(100%)

* Less than 0.5 %

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 41. Current Job of Doctoral Degree Recipients Employed Full-Time (By Campus)

	UMB (N=61)	UMBC (N=57)	UMCP (N=577)	Morgan (N=9)	Johns Hopkins (N=434)
Advertising/Public Relations	-	-	*	-	-
Computer Programmer/Analyst	-	2%	2%	-	1%
Computer Engineer	2%	5%	4%	-	1%
Education Administrator/Counselor	2%	2%	9%	44%	1%
Educator	36%	19%	33%	22%	26%
Engineer	-	11%	10%	-	5%
Executive/Administrator	10%	2%	4%	22%	3%
Financial Services Professional	-	-	1%	-	*
Health Care Professional	8%	7%	1%	-	6%
Mental Health Care Provider	8%	11%	4%	-	*
Legal Services/Law Enforcement	-	-	*	-	2%
Personnel Professional	-	-	1%	11%	-
Postdoctoral Fellow	7%	7%	3%	-	9%
Research Analyst/Assistant	2%	4%	3%	-	2%
Sales or Marketing Professional	-	-	*	-	*
Scientist, Life Sciences	15%	7%	6%	-	15%
Scientist, Physical Sciences	2%	9%	7%	-	9%
Scientist, Social Sciences/Policy Analyst	2%	4%	4%	-	9%
Statistician	-	4%	-	-	2%
Social Services Professional	-	2%	*	-	1%
Visual Artist/Performing Artist/Entertainer/Athlete	-	-	*	-	1%
Writer/Journalist/Public Information Specialist	-	-	1%	-	*
Non Professional	-	-	*	-	1%
Other	8%	7%	7%	-	7%
	(100%)	(100%)	(100%)	(100%)	(100%)

* Less than 0.5 percent

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 42. Perception of Graduates Employed Full-Time of How Well Doctoral Studies Prepared Them for Their Current Job (By Campus)

	N	Excellent	Good	Adequate	Inadequate	[redacted]
UMB	60	40%	42%	17%	2%	(100%)
UMBC	36	56%	25%	11%	8%	(100%)
UMCP	548	40%	41%	17%	2%	(100%)
Morgan	8	38%	50%	13%	0%	(100%)
Johns Hopkins	424	53%	36%	9%	3%	(100%)

SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 43. Current Employment Status of Doctoral Degree Recipients (By Program)

	N	Employed Full-Time	Employed PT Seeking FT	Employed PT Not Seeking FT	Unemployed	Not Seeking Employment	[redacted]
Agriculture	15	93%	0%	0%	6.7%	0%	(100%)
Area Studies	16	75%	0%	13%	6.3%	6%	(100%)
Biological Sciences	146	90%	2%	3%	1.4%	3%	(100%)
Business	18	89%	0%	0%	0.0%	11%	(100%)
Computer Science	34	100%	0%	0%	0.0%	0%	(100%)
Education	253	81%	2%	10%	2.4%	4%	(100%)
Engineering	167	96%	0%	3%	0.6%	0%	(100%)
Fine Arts	62	61%	19%	11%	8.1%	0%	(100%)
Foreign Languages	18	67%	11%	6%	5.6%	11%	(100%)
Health Professions	153	94%	1%	5%	0.7%	1%	(100%)
Home Economics	15	80%	0%	7%	0.0%	13%	(100%)
Letters	51	80%	6%	12%	2.0%	0%	(100%)
Mathematics	24	92%	0%	4%	0.0%	4%	(100%)
Physical Sciences	106	96%	0%	4%	0.0%	0%	(100%)
Psychology	52	87%	2%	8%	0.0%	0%	(100%)
Public Affairs	24	96%	4%	0%	0.0%	0%	(100%)
Social Sciences	156	86%	6%	4%	3.2%	1%	(100%)

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996

Table 44. Current Place of Employment of Doctoral Degree Recipients Employed Full-Time (By Program)

	N	Maryland	DC	Neighboring State	Other State	Other Country	
Agriculture	14	29%	29%	21%	21%	0%	(100%)
Area Studies	12	33%	8%	25%	33%	0%	(100%)
Biological Sciences	128	41%	3%	8%	48%	1%	(100%)
Business	16	13%	6%	31%	50%	0%	(100%)
Computer Science	34	27%	0%	41%	29%	3%	(100%)
Education	203	63%	10%	10%	17%	0%	(100%)
Engineering	160	33%	8%	19%	37%	3%	(100%)
Fine Arts	35	29%	3%	14%	51%	3%	(100%)
Foreign Languages	11	0%	18%	27%	46%	9%	(100%)
Health Professions	143	46%	11%	8%	32%	2%	(100%)
Home Economics	12	33%	25%	8%	33%	0%	(100%)
Letters	41	29%	5%	20%	46%	0%	(100%)
Mathematics	21	10%	5%	29%	57%	0%	(100%)
Physical Sciences	102	39%	5%	19%	35%	2%	(100%)
Psychology	45	33%	4%	13%	44%	4%	(100%)
Public Affairs	23	48%	13%	13%	26%	0%	(100%)
Social Sciences	129	20%	20%	18%	37%	5%	(100%)

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 45. Type of Current Employer of Doctoral Degree Recipients Employed Full-Time (By Program)

	N	Business/ Industry	School	Community College	Four-year College	Federal Govt.	State/Local Govt.	Military	Hospital/ Health-Rel.	Other Non-Profit	Self Employed	Other	
Agriculture	14	29%	-	-	36%	36%	-	-	-	-	-	-	(100%)
Area Studies	12	8%	17%	-	25%	17%	-	-	-	17%	8%	8%	(100%)
Biological Sciences	129	17%	-	1%	31%	20%	2%	2%	22%	4%	1%	1%	(100%)
Business	16	19%	-	-	81%	-	-	-	-	-	-	-	(100%)
Computer Science	34	32%	-	-	35%	12%	-	3%	3%	-	9%	6%	(100%)
Education	201	4%	24%	8%	39%	3%	6%	-	3%	2%	8%	4%	(100%)
Engineering	159	54%	1%	-	15%	13%	2%	6%	2%	4%	2%	3%	(100%)
Fine Arts	38	3%	8%	-	68%	-	3%	3%	-	5%	8%	3%	(100%)
Foreign Languages	12	8%	-	-	83%	8%	-	-	-	-	-	-	(100%)
Health Professions	140	8%	1%	-	40%	17%	1%	2%	12%	12%	2%	5%	(100%)
Home Economics	12	-	-	-	50%	42%	-	-	8%	-	-	-	(100%)
Letters	41	5%	5%	10%	73%	2%	-	-	-	5%	-	3%	(100%)
Mathematics	22	41%	5%	-	50%	5%	-	-	-	-	-	-	(100%)
Physical Sciences	100	31%	-	-	44%	16%	1%	2%	-	3%	-	3%	(100%)
Psychology	45	11%	-	-	38%	4%	9%	-	18%	13%	7%	-	(100%)
Public Affairs	23	4%	-	-	65%	-	-	-	9%	9%	13%	-	(100%)
Social Sciences	131	11%	1%	4%	53%	11%	2%	3%	1%	8%	2%	7%	(100%)

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 46. Median Annual Salary of Doctoral Degree Recipients Employed Full-Time (By Program)

	N	Median Salary
Agriculture	14	$53,750
Area Studies	12	$60,000
Biological Sciences	125	$44,720
Business	15	$72,500
Computer Science	31	$79,170
Education	202	$59,150
Engineering	155	$68,900
Fine Arts	35	$38,610
Foreign Languages	12	$47,500
Health Professions	135	$59,860
Home Economics	12	$50,000
Letters	39	$39,810
Mathematics	21	$48,500
Physical Sciences	99	$52,500
Psychology	45	$49,000
Public Affairs	21	$53,000
Social Sciences	129	$50,250

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-up Survey of Doctoral Degree, Recipients from the Classes of 1992 to 1996.

Table 47. Relationship Between the Job of Graduates Employed Full-Time and Their Doctoral Major (By Program)

	N	Directly Related	Somewhat Related	Not Related	[redacted]
Agriculture	14	43%	36%	21%	(100%)
Area Studies	12	42%	42%	17%	(100%)
Biological Sciences	127	66%	25%	9%	(100%)
Business	16	81%	19%	0%	(100%)
Computer Science	27	74%	22%	4%	(100%)
Education	206	68%	29%	3%	(100%)
Engineering	153	58%	34%	9%	(100%)
Fine Arts	34	79%	15%	6%	(100%)
Foreign Languages	12	83%	8%	8%	(100%)
Health Professions	142	73%	23%	4%	(100%)
Home Economics	11	73%	27%	0%	(100%)
Letters	40	75%	20%	5%	(100%)
Mathematics	16	56%	38%	6%	(100%)
Physical Sciences	93	57%	26%	17%	(100%)
Psychology	34	91%	9%	0%	(100%)
Public Affairs	23	83%	13%	4%	(100%)
Social Sciences	125	77%	19%	4%	(100%)

NOTE: Programs with fewer than 10 respondents were excluded.

SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 48. Percentage of Graduates Employed Full-Time Who Needed a Doctoral Degree to Obtain Their Current Job (By Program)

	N	Yes	No	[redacted]
Agriculture	14	36%	64%	(100%)
Area Studies	12	33%	67%	(100%)
Biological Sciences	132	78%	22%	(100%)
Business	16	81%	19%	(100%)
Computer Science	34	65%	35%	(100%)
Education	206	37%	63%	(100%)
Engineering	160	51%	49%	(100%)
Fine Arts	37	51%	49%	(100%)
Foreign Languages	12	75%	25%	(100%)
Health Professions	141	70%	30%	(100%)
Home Economics	12	83%	17%	(100%)
Letters	40	70%	30%	(100%)
Mathematics	22	68%	32%	(100%)
Physical Sciences	102	78%	22%	(100%)
Psychology	45	87%	13%	(100%)
Public Affairs	23	57%	43%	(100%)
Social Sciences	134	74%	26%	(100%)

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 49. "If I Were to Do It Over, I would Choose the Same Doctoral Field Again" (By Program)

	N	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Agriculture	15	27%	33%	20%	13%	7%
Area Studies	16	56%	19%	19%	6%	0%
Biological Sciences	140	44%	21%	23%	9%	3%
Business	19	53%	26%	16%	5%	0%
Computer Science	27	70%	15%	11%	4%	0%
Education	255	42%	31%	18%	6%	2%
Engineering	160	32%	32%	26%	6%	4%
Fine Arts	57	54%	21%	14%	9%	2%
Foreign Languages	17	47%	12%	35%	6%	0%
Health Professions	152	48%	28%	16%	6%	3%
Home Economics	15	47%	47%	0%	0%	7%
Letters	51	47%	26%	22%	6%	0%
Mathematics	18	50%	11%	28%	0%	11%
Physical Sciences	98	24%	30%	27%	13%	7%
Psychology	39	36%	41%	18%	5%	0%
Public Affairs	24	50%	21%	17%	8%	4%
Social Sciences	148	50%	22%	16%	5%	7%

NOTE: Programs with fewer than 10 respondents were excluded.
SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 50. Current Employment Status of Doctoral Degree Recipients (By Gender and Racial Minorities)

	N	Employed Full-Time	Employed PT Seeking FT	Employed PT Not Seeking FT	Unemployed	Not Seeking Employment	
Gender							
Men	661	96%	2%	1%	1.4%	*	(100%)
Women	663	80%	4%	10%	2.3%	4%	(100%)
Racial Minorities							
African American	57	84%	4%	2%	5.3%	5%	(100%)
All Minorities	171	88%	4%	2%	2.9%	4%	(100%)

NOTE: "All minorities" include African American, Asian American, Hispanic and Native American.
* Less than 0.5 percent
SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 51. Type of Current Employer of Doctoral Degree Recipients Employed Full-Time (By Gender and Racial Minorities)

	Gender		Racial Minorities	
	Men (623)	Women (520)	African American (48)	All Minorities (150)
Business/Industry	25%	10%	2%	21%
Elementary/Secondary School	3%	8%	16%	6%
Community College	1%	4%	7%	3%
Four-year College or University	35%	48%	56%	41%
Federal Government Agency	12%	10%	4%	10%
State or Local Government Agency	2%	2%	4%	4%
Military	3%	1%	2%	2%
Hospital or Health-Related Facility	7%	5%	-	3%
Other Non-Profit Organization	5%	5%	2%	6%
Self-employed	3%	3%	7%	3%
Other	3%	3%	-	2%
	(100%)	(100%)	(100%)	(100%)

NOTE: "All Minorities" include African American, Asian American, Hispanic and Native American.
SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 52. Current Job of Doctoral Degree Recipients Employed Full-Time (By Gender and Racial Minorities)

	Gender		Racial Minorities	
	Men (619)	Women (519)	African American (48)	All Minorities (150)
Advertising/Public Relations	*	-	-	-
Computer Programmer/Analyst	3%	-	-	3%
Computer Engineer	4%	1%	-	1%
Education Administrator/Counselor	3%	7%	20%	7%
Educator	22%	40%	54%	29%
Engineer	12%	2%	-	6%
Executive/Administrator	3%	5%	4%	2%
Financial Services Professional	1%	-	-	1%
Health Care Professional	4%	3%	2%	4%
Mental Health Care Provider	2%	5%	2%	1%
Legal Services/Law Enforcement	1%	1%	-	2%
Personnel Professional	*	*	2%	1%
Postdoctoral Fellow	7%	5%	-	6%
Research Analyst/Research Assistant	3%	3%	4%	4%
Sales or Marketing Professional	*	*	-	1%
Scientist, Life Sciences	12%	8%	4%	10%
Scientist, Physical Sciences	11%	3%	2%	5%
Scientist, Social Science/Policy Analyst	5%	7%	4%	8%
Statistician	1%	1%	-	1%
Social Services Professional	*	1%	-	-
Visual Artist/Performing Artist/Entertainer/Athlete	1%	-	-	1%
Writer/Journalist/Public Information Specialist	1%	1%	-	-
Non Professional	*	*	-	-
Other	6%	8%	-	6%

* Less than 0.5 percent

NOTE: "All Minorities" include African American, Asian American, Hispanic and Native American.

SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

Table 53. Current Residence of Doctoral Degree Recipients by Residence at the Time of Enrollment in Doctoral Studies

	Current Residence			
	N	Maryland	Elsewhere	[redacted]
Residence at Enrollment				
Maryland	628	66%	34%	(100%)
Elsewhere	601	26%	74%	(100%)

Table 54. Current Place of Employment of Doctoral Degree Recipients Employed Full-Time by Residence at the Time of Enrollment in Doctoral Studies

	Current Place of Employment		
	N	Maryland	Elsewhere
Residence at Enrollment			
Maryland	542	53%	47%
Elsewhere	544	23%	77%

SOURCE: Follow-Up Survey of Doctoral Degree Recipients from the Classes of 1992 to 1996.

APPENDIX A

MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Univ. of Maryland, Baltimore

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0412-30 ANATOMY - MEDICAL PROGRAM		3	0	2	0	0	0	1	2	0	0	3	1	0	0
0414-10 BIOCHEMISTRY - DENTAL PROGRAM	D94	2	1	0	0	0	1	0	0	2	1	0	0	0	0
0414-30 BIOLOGICAL CHEMISTRY - MEDICAL PROG		0	1	3	2	1	3	4	1	7	6	5	6	3	4
0415-30 BIOPHYSICS - MEDICAL PROGRAM		0	0	0	0	0	0	0	0	2	0	1	0	1	0
0417-01 MOLECULAR & CELL BIOLOGY (W/UMBC)	A88	0	0	0	0	0	0	0	0	1	3	2	5	6	7
0418-00 MARINE-ESTUARINE-ENV SC(W/UMBC,UMCP	A78	0	0	0	0	0	0	0	0	2	0	1	0	0	2
0422-30 HUMAN GENETICS	A84	0	0	0	0	1	2	2	2	0	2	2	1	3	1
0426-00 TOXICOLOGY (W/ UMBC,UMCP & UMES)	A84	0	0	0	0	0	0	1	2	2	1	2	5	3	6
1203-00 NURSING	A78	5	5	5	8	8	10	8	11	4	8	9	13	19	17
1205-11 ORAL PATHOLOGY-DENTAL PROGRAM		0	0	0	0	0	0	0	0	1	1	1	0	0	0
1207-31 EPIDEMIOLOGY	A82	0	0	0	0	0	0	1	1	1	0	0	1	0	1
1299-50 PHARMACEUTICS - PHARMACY PROGRAM	D94	2	5	7	2	1	3	2	4	3	5	4	6	3	3
1299-51 PHARMACOGNOSY - PHARMACY PROGRAM	D83	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1299-53 PHARMACOLOGY & TOXICOLOGY - PHARMAC	D94	0	3	1	1	1	3	2	5	1	4	1	0	2	3
1299-54 MEDICINAL CHEMISTRY - PHARMACY PROG	D83	1	0	1	0	0	2	0	0	0	0	0	0	0	0
1299-55 PHARMACY ADMINISTRATION	A83	0	0	1	0	0	2	0	2	3	0	2	3	3	1
1299-56 BIOMEDICINAL CHEMISTRY	D94	0	0	2	1	1	0	3	3	1	0	3	2	6	3
2104-00 SOCIAL WORK		9	8	6	8	9	4	7	10	13	13	3	11	6	9

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MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Univ. of Maryland, Baltimore

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0408-30 PATHOLOGY - MEDICAL PROGRAM		2	3	6	7	1	5	4	1	7	6	2	0	1	1
0409-30 PHARMACOLOGY & EXPERIMENTAL THERAPE		1	0	0	0	1	0	2	4	2	4	4	3	3	3
0410-10 PHYSIOLOGY - DENTAL PROGRAM	D94	0	0	0	0	0	0	0	1	1	2	1	3	0	0
0410-30 PHYSIOLOGY - MEDICAL PROGRAM		1	1	1	1	1	3	1	5	2	2	5	4	3	6
0411-10 MICROBIOLOGY - DENTAL PROGRAM	D94	1	2	1	0	5	3	1	3	2	1	1	5	1	0
0411-30 MICROBIOLOGY - MEDICAL PROGRAM		2	0	1	1	1	0	2	2	2	6	5	2	0	3
0412-10 ANATOMY - DENTAL PROGRAM	D94	0	0	1	2	1	1	2	0	0	0	0	1	1	1

MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Univ. of MD -Baltimore County

DOCTORATE

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
0401-00 BIOLOGICAL SCIENCES		2	5	7	2	5	5	3	4	5	3	2	6	2	2
0414-01 BIOCHEMISTRY (W/UMAB AND UMCP)		1	4	1	0	1	1	1	1	1	1	1	2	1	1
0417-01 MOLECULAR & CELL BIOLOGY (W/ UMAB)	A88	0	0	0	0	0	1	2	1	3	1	6	4	5	1
0418-00 MARINE-ESTUARINE-ENV SC(W/UMAB,UMCP	A78	0	0	0	1	0	0	0	0	0	0	1	0	0	0
0701-00 COMPUTER SCIENCE (W/ UMCP)	A84	0	1	0	1	1	4	3	3	1	5	2	4	4	4
0702-00 OPERATIONS ANALYSIS	A87	0	0	0	0	0	0	0	1	3	2	5	1	1	5
0906-00 CHEMICAL ENGINEERING (W/ UMCP)	A84	0	0	0	0	0	0	0	0	2	3	0	3	0	2
0909-00 ELECTRICAL ENGINEERING (W/ UMCP)	A84	0	0	0	0	0	0	1	0	1	3	4	1	3	8
0910-00 MECHANICAL ENGINEERING (W/ UMCP)	A84	0	0	0	0	0	0	0	0	5	0	3	6	3	8
1099-02 ETHNOMUSICOLOGY	D94	0	1	1	1	1	0	1	0	4	1	2	4	1	4
1702-00 STATISTICS	A83	0	0	0	2	0	1	0	3	2	2	1	4	3	3
1703-01 APPLIED MATHEMATICS		1	0	1	1	1	1	2	4	5	2	0	2	2	1
1902-00 APPLIED PHYSICS	A92	0	0	0	0	0	0	0	0	0	1	1	4	3	0
1905-00 CHEMISTRY	A85	0	0	0	0	0	2	0	8	5	3	4	7	6	4
2009-00 APPLIED DEVELOPMENTAL PSYCHOLOGY(W/	A79	2	2	3	1	1	3	3	0	2	1	1	2	6	1
2099-01 HUMAN SERVICES PSYCHOLOGY	A82	0	0	0	1	2	5	5	2	4	2	7	2	8	5
2299-02 POLICY SCIENCES (W/UMCP)		1	1	2	2	1	7	6	0	6	4	2	6	9	5

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MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Univ. of MD, College Park

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0102-00 AGRONOMY		1	2	1	5	4	1	5	4	3	5	5	4	2	3
0104-00 ANIMAL SCIENCE		0	1	1	4	5	4	3	1	3	1	4	3	4	1
0106-00 POULTRY SCIENCE		2	2	1	2	1	1	1	0	1	3	1	1	2	1
0108-00 HORTICULTURE		0	4	3	2	2	4	3	3	2	2	3	3	1	1
0111-00 AGRICULTURAL & RESOURCE ECONOMICS		2	2	5	0	4	1	1	1	3	3	1	6	1	6
0113-00 FOOD SCIENCE		1	2	1	0	2	3	2	0	1	1	1	2	2	1
0313-00 AMERICAN STUDIES		4	1	3	3	1	4	6	4	9	8	2	5	4	3
0402-00 PLANT BIOLOGY		2	8	6	5	5	3	2	7	7	7	2	7	7	5
0407-00 ZOOLOGY		4	7	10	7	8	16	9	9	8	4	8	5	7	2
0411-01 MICROBIOLOGY		7	8	4	2	3	8	10	2	3	8	3	1	3	3
0414-01 BIOCHEMISTRY (W/UMAB AND UMBC)		4	3	3	6	5	4	8	6	3	9	8	7	8	3
0417-01 MOLECULAR & CELL BIOLOGY	A88	0	0	0	0	0	0	0	0	1	0	0	1	2	6
0418-00 MARINE-ESTUARINE-ENV SC(W/UMAB,UMBC	A78	5	4	7	7	6	6	6	8	9	12	7	6	7	17
0421-00 ENTOMOLOGY		6	2	0	1	1	5	1	10	0	5	2	5	6	3
0424-00 NUTRITION		5	4	4	2	3	5	2	3	1	3	1	0	0	0
0501-00 BUSINESS & MANAGEMENT		7	9	8	8	8	9	8	10	19	16	18	12	13	15
0601-00 PUBLIC COMMUNICATION	D90	5	5	5	5	1	8	8	4	5	6	2	3	0	1
0601-01 SPEECH COMMUNICATIONS	A90	0	0	0	0	0	0	0	0	1	0	1	0	3	2
0602-00 MASS COMMUNICATION	A90	0	0	0	0	0	0	1	1	1	0	1	5	2	9
0603-00 RADIO-TELEVISION-FILM	D92	0	0	0	0	0	0	1	1	2	1	0	1	0	0
0701-00 COMPUTER SCIENCE		9	11	9	8	10	23	13	21	27	21	18	15	20	11
0808-00 SPECIAL EDUCATION		4	5	4	5	5	4	6	5	9	7	2	5	8	3
0822-00 HUMAN DEVELOPMENT EDUCATION		21	16	20	23	11	10	21	21	21	17	18	12	21	25
0824-00 MEASUREMENT, STATISTICS & EVALUATIO		2	1	6	2	2	1	1	4	3	1	2	4	1	3
0826-01 COUNSELING & PERSONNEL SERVICES		15	13	10	12	21	12	15	20	15	12	6	13	8	12
0827-00 EDUCATION POLICY,PLANNING & ADMIN.		16	23	27	24	19	22	30	22	24	33	28	18	22	18
0829-00 CURRICULUM & INSTRUCTION	A82	49	33	39	38	29	43	24	35	36	25	24	16	22	16
0835-01 KINESIOLOGY		6	12	5	5	10	4	12	10	5	7	3	5	7	7
0837-00 HEALTH EDUCATION		6	4	4	4	9	12	5	8	6	11	9	5	6	7
0839-01 INDUSTRIAL, TECHNOLOGICAL & OCC. ED	D92	6	13	4	6	5	12	3	4	3	8	4	3	1	1
0899-01 AGRICULTURE & EXTENSION EDUCATION	D92	1	4	5	2	4	4	2	3	3	2	6	0	3	1
0902-00 AEROSPACE ENGINEERING		6	5	3	7	4	9	3	6	5	9	7	6	11	4
0903-00 BIOLOGICAL RESOURCES ENGINEERING		1	0	2	2	4	0	3	0	3	0	1	1	0	1
0906-00 CHEMICAL ENGINEERING		6	5	4	2	3	5	7	8	9	3	6	10	3	6
0908-00 CIVIL ENGINEERING		7	2	12	5	12	14	8	7	5	16	5	8	8	8
0909-00 ELECTRICAL ENGINEERING		6	6	7	13	26	32	27	18	45	45	51	26	37	36
0910-00 MECHANICAL ENGINEERING		2	6	5	6	8	8	7	17	16	13	20	17	13	17
0915-00 MATERIALS SCIENCE & ENGINEERING		0	2	3	2	1	2	1	2	5	7	11	8	6	8
0920-00 NUCLEAR ENGINEERING		3	1	2	3	1	0	1	3	2	2	3	0	5	3
0999-02 RELIABILITY ENGINEERING	A89	0	0	0	0	0	0	0	2	1	2	2	5	3	2

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Univ. of MD, College Park

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
1003-00 ART		0	1	1	2	4	3	4	2	1	4	0	5	3	2
1005-00 MUSIC		4	8	7	11	4	5	9	16	7	10	9	19	19	21
1007-01 THEATRE	A90	0	0	0	0	0	0	1	1	0	0	1	0	1	3
1102-00 FRENCH LANGUAGE & LITERATURE		0	2	3	0	3	1	1	2	0	0	3	2	2	2
1103-00 GERMAN LANGUAGE & LITERATURE		2	4	0	1	1	2	0	2	1	2	1	3	2	1
1105-00 SPANISH LANGUAGE & LITERATURE		2	1	3	2	4	2	0	1	3	3	2	2	8	3
1220-00 HEARING & SPEECH SCIENCES		1	2	0	0	2	0	0	2	0	1	1	1	3	1
1303-01 TEXTILES & CONSUMER ECONOMICS	D92	3	2	2	2	4	5	7	8	4	7	3	1	0	1
1306-00 FOOD, NUTRITION & INSTITUTION ADMIN.	D94	0	0	2	2	2	3	2	1	3	2	2	1	1	2
1501-00 ENGLISH LANGUAGE & LITERATURE		8	9	9	8	8	10	9	11	13	12	20	10	13	11
1503-00 COMPARATIVE LITERATURE		1	0	0	2	0	1	6	2	1	2	0	2	3	2
1505-00 LINGUISTICS	A86	0	0	0	0	1	0	0	2	1	3	3	2	6	2
1509-01 PHILOSOPHY		1	0	2	1	1	3	1	5	3	1	1	1	2	3
1601-00 LIBRARY & INFORMATION SERVICES		2	0	0	0	3	1	4	0	2	2	3	0	1	1
1701-00 MATHEMATICS		5	2	3	5	5	10	12	13	10	10	8	12	10	14
1702-00 MATHEMATICAL STATISTICS		0	2	1	2	2	3	3	6	2	1	2	0	1	4
1703-01 APPLIED MATHEMATICS		9	10	4	4	6	4	8	6	2	11	8	7	6	10
1902-00 PHYSICS		27	17	22	17	15	30	30	40	20	29	21	37	27	29
1905-00 CHEMISTRY		18	19	18	20	11	21	20	16	8	17	15	13	18	19
1908-00 CHEMICAL PHYSICS		1	2	1	0	0	0	3	3	5	3	2	6	5	4
1911-00 ASTRONOMY		1	6	5	5	2	1	2	3	5	2	5	5	5	2
1913-00 METEOROLOGY		0	2	0	1	2	1	1	3	6	1	5	4	9	1
1914-00 GEOLOGY	A81	0	0	0	0	1	0	2	1	2	1	1	3	1	0
2001-01 PSYCHOLOGY		28	19	23	16	26	15	23	16	16	18	12	20	22	20
2103-01 RECREATION	D92	7	3	6	3	3	1	3	1	2	2	4	1	0	2
2204-00 ECONOMICS		10	16	12	14	15	15	11	18	19	13	12	19	19	14
2205-00 HISTORY		6	6	4	7	6	5	4	4	6	9	8	6	7	7
2206-00 GEOGRAPHY		1	0	3	1	2	1	0	1	1	1	7	0	1	3
2207-00 GOVERNMENT & POLITICS		9	6	5	7	11	14	13	18	12	13	14	17	16	9
2208-01 SOCIOLOGY		3	5	6	1	4	9	5	7	5	4	4	10	5	5
2209-00 CRIMINAL JUSTICE & CRIMINOLOGY		3	0	3	2	2	3	2	4	4	7	5	3	7	4
2299-02 POLICY SCIENCES (W/UMBC)		0	0	0	0	0	0	1	1	1	2	2	0	1	1

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Univ. of MD -Eastern Shore

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0418-00 MARINE-ESTUARINE-ENV SC(W/UMAB,UMBC	A78	0	0	2	0	1	2	0	1	2	2	3	3	0	3

FOOTNOTE: COLUMN A/D IDENTIFIES PROGRAMS THAT HAVE BEEN APPROVED (A) OR DISCONTINUED (D) AFTER 1976 ALONG WITH YEAR OF COMMISSION ACTION

MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Morgan State University

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0827-00 URBAN EDUCATIONAL LEADERSHIP	A79	1	2	4	2	3	3	4	7	5	9	5	3	5	4

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Baltimore Hebrew University

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
2301-05 JUDAIC STUDIES		0	0	0	0	0	0	0	0	1	0	0	0	1	0

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MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Johns Hopkins University

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0309-00 NEAR EASTERN STUDIES		0	1	0	1	0	0	2	2	4	3	0	3	1	2
0401-00 BIOLOGY,GENERAL		15	14	21	13	10	18	28	19	16	16	21	20	18	28
0409-01 PHARMACOLOGY		3	7	8	7	7	6	7	8	10	4	4	7	11	5
0410-01 PHYSIOLOGY		0	1	1	1	1	1	1	1	2	1	4	1	2	2
0411-01 MICROBIOLOGY		0	0	0	1	0	0	0	0	0	0	0	0	0	0
0412-01 ANATOMY		0	0	0	5	3	4	2	2	0	0	0	0	0	0
0414-01 BIOCHEMISTRY & CELL BIOLOGY		1	5	6	9	16	18	20	17	15	20	9	12	9	8
0415-01 BIOPHYSICS		1	5	2	4	4	2	3	3	6	3	8	13	25	8
0416-00 MOLECULAR BIOLOGY		14	3	3	0	0	0	0	0	10	5	8	8	10	14
0417-01 CELLULAR & MOLECULAR MEDICINE	A94	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0422-00 GENETICS		0	0	0	0	0	0	0	0	0	0	0	0	0	0
0425-30 NEUROSCIENCE	A83	0	0	0	0	0	0	0	0	0	0	0	0	0	11
0499-01 PHYSIOLOGICAL CHEMISTRY		0	0	0	0	0	0	0	0	0	0	0	0	0	0
0701-00 COMPUTER SCIENCE	A88	0	0	0	2	2	3	2	2	3	0	4	4	6	3
0801-00 EDUCATION		6	7	4	11	6	6	10	6	4	3	3	2	3	8
0820-00 HUMAN COMMUNICATIONS & ITS DISORDER	D89	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0826-01 SCHOOL COUNSELING & GUIDANCE	D89	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0905-00 BIOMEDICAL ENGINEERING		3	1	6	2	4	1	7	3	4	2	4	11	6	7
0906-00 CHEMICAL ENGINEERING		0	8	1	4	5	0	5	4	5	7	11	5	2	6
0908-00 CIVIL ENGINEERING		3	1	2	2	3	2	6	1	4	2	3	7	5	5
0909-00 ELECTRICALENGINEERING		4	8	5	6	3	6	10	5	6	1	7	5	8	7

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MARYLAND HIGHER EDUCATION COMMISSION
TRENDS IN DEGREES AWARDED BY PROGRAM

Johns Hopkins University

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
0309-00 NEAR EASTERN STUDIES		0	1	0	1	0	0	2	2	4	3	0	3	1	2
0401-00 BIOLOGY,GENERAL		15	14	21	13	10	18	28	19	16	16	21	20	18	28
0409-01 PHARMACOLOGY		3	7	8	7	7	6	7	8	10	4	4	7	11	5
0410-01 PHYSIOLOGY		0	1	1	1	1	1	1	1	2	1	4	1	2	2
0411-01 MICROBIOLOGY		0	0	0	1	0	0	0	0	0	0	0	0	0	0
0412-01 ANATOMY		0	0	0	5	3	4	2	2	0	0	0	0	0	0
0414-01 BIOCHEMISTRY & CELL BIOLOGY		1	5	6	9	16	18	20	17	15	20	9	12	9	8
0415-01 BIOPHYSICS		1	5	2	4	4	2	3	3	6	3	8	13	25	8
0416-00 MOLECULAR BIOLOGY		14	3	3	0	0	0	0	0	10	5	8	8	10	14
0417-01 CELLULAR & MOLECULAR MEDICINE	A94	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0422-00 GENETICS		0	0	0	0	0	0	0	0	0	0	0	0	0	0
0425-30 NEUROSCIENCE	A83	0	0	0	0	0	0	0	0	0	0	0	0	0	11
0499-01 PHYSIOLOGICAL CHEMISTRY		0	0	0	0	0	0	0	0	0	0	0	0	0	0
0701-00 COMPUTER SCIENCE	A88	0	0	0	2	2	3	2	2	3	0	4	4	6	3
0801-00 EDUCATION		6	7	4	11	6	6	10	6	4	3	3	2	3	8
0820-00 HUMAN COMMUNICATIONS & ITS DISORDER	D89	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0826-01 SCHOOL COUNSELING & GUIDANCE	D89	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0905-00 BIOMEDICAL ENGINEERING		3	1	6	2	4	1	7	3	4	2	4	11	6	7
0906-00 CHEMICAL ENGINEERING		0	8	1	4	5	0	5	4	5	7	11	5	2	6
0908-00 CIVIL ENGINEERING		3	1	2	2	3	2	6	1	4	2	3	7	5	5
0909-00 ELECTRICALENGINEERING		4	8	5	6	3	6	10	5	6	1	7	5	8	7

MARYLAND HIGHER EDUCATION COMMISSION
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Loyola College

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
2003-00 CLINICAL PSYCHOLOGY	A94	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004-02 PASTORAL COUNSELING	A86	0	0	0	0	4	5	3	9	11	9	9	5	11	3

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Ner Israel Rabbinical College

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
2301-06 TALMUDIC LAW		2	0	2	1	1	1	2	3	3	2	2	4	4	4

MARYLAND HIGHER EDUCATION COMMISSION
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Peabody Institute of the JHU

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
1004-01 PERFORMANCE	D98	0	0	0	0	0	0	0	9	8	14	5	10	7	13
1004-02 PIANO	D92	5	4	5	3	3	4	2	0	0	0	0	0	0	0
1004-03 VOICE	D92	0	0	0	0	1	2	2	0	0	0	0	0	0	0
1004-04 ORCHESTRAL INSTRUMENTS	D92	0	0	0	0	1	0	1	0	0	0	0	0	0	0
1004-05 ORGAN	D92	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1004-09 COMPOSITION	D98	0	0	0	0	0	3	2	3	2	4	2	2	1	2
1004-11 CONDUCTING - INSTRUMENTAL	D92	2	0	0	1	0	1	3	0	0	0	0	0	0	0
1004-15 CONDUCTING	D98	0	0	0	0	0	0	0	0	1	5	1	2	4	7

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St. Mary's Seminary and University

PROGRAM	A/D	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DOCTORATE															
2301-01 THEOLOGY	D85	1	0	0	4	4	0	0	0	0	0	0	0	0	0
2301-03 MINISTRY		21	24	25	17	18	15	11	7	0	0	0	0	0	0

APPENDIX B

Questionnaire for Doctoral Graduates

Please fill in the bubble next to the most appropriate response. Once completed, return the questionnaire to us in the envelope provided. Thank you!

Use a No. 2 pencil.
Choose your answer and fill circles that correspond to your answers.
Please fill circles completely.

Proper Mark ○ ●
Improper Marks ⊙ ✓ ☒

1. Are you currently employed? (Select one only)

① Yes, full-time (including postdoctoral research)
② Yes, part-time but looking for full-time employment
③ Yes, part-time but not looking for full-time employment
④ No, but seeking employment
⑤ No, and not seeking employment

If you answered No, skip to question 12. Questions 2-11 are about your current, primary job.

2. Where is your current place of employment?

① Maryland
② District of Columbia
③ Neighboring State (DE, NJ, PA, VA, WVA)
④ Other state (please specify) ____________________
⑤ Other country

3. What is the name of your current employer? That is, the company name, government agency, military branch, "self-employed", etc. Your employer will not be contacted.

____

4. What is your current job title?

____

5. Which category best describes your current employer? (Select only one)

① Business/Industry
② Elementary/Secondary School
③ Community College
④ Four-Year College or University
⑤ Federal Government Agency
⑥ State or Local Government Agency
⑦ Military
⑧ Hospital, Other Health-Related Facility
⑨ Other Non-Profit Organization
⑩ Self-Employed
⑪ Other (please specify)
____

○○

DO NOT MARK IN THIS AREA

6. Which single category best describes your current job? (Select only one)

① Advertising/Public Relations Professional
② Computer Programmer/Analyst
③ Computer Software or Hardware Engineer
④ Educational Administrator/Counselor
⑤ Educator
⑥ Engineer
⑦ Engineering Technician
⑧ Executive/Administrator
⑨ Financial Services Professional
⑩ Health Care Professional
⑪ Mental Health Care Provider
⑫ Legal Services/Law Enforcement
⑬ Personnel Professional
⑭ Postdoctoral Fellow
⑮ Research Analyst/Research Assistant
⑯ Sales or Marketing Professional
⑰ Scientist, Life Sciences
⑱ Scientist, Physical Sciences
⑲ Scientist, Social Sciences/Policy Analyst
⑳ Statistician
㉑ Social Services Professional
㉒ Visual Artist/Performing Artist/Entertainer/Athlete
㉓ Writer/Journalist/Public Information Specialist
㉔ Nonprofessional (clerical, skilled craft worker, laborer, services worker)
㉕ Other (please specify) ____________________

7. Please indicate the salary grouping that best reflects your current annual income. (Select only one)

① Under $20,000
② $20,000-24,999
③ $25,000-29,999
④ $30,000-$34,999
⑤ $35,000-39,999
⑥ $40,000-$49,999
⑦ $50,000-59,999
⑧ $60,000-69,999
⑨ $70,000-79,999
⑩ $80,000-89,999
⑪ $90,000-99,999
⑫ $100,000 or over

8. How well did doctoral studies prepare you for your current job?

① Excellent preparation
② Good preparation
③ Adequate preparation
④ Inadequate preparation
⑤ Not applicable to my situation

9. To what extent is your current job related to your doctoral major or area of study?

① Directly related
② Somewhat related
③ Not related

10. If your current job is not related to your doctoral major or area of study, indicate the main reason. (Select only one)

① Could not find job in major field
② Better pay in field in which employed
③ Better opportunity for advancement in field in which employed
④ Field in which employed appealed to me for other reasons
⑤ Did not want to work in major field
⑥ Other (specify) ____________________

11. Was a doctoral degree required in order to obtain your current job?

① Yes
② No

12. When did you find your first job after earning your doctoral degree?

① I already had a job which continued after completing my degree program
② I found a job prior to completing my degree program
③ Two months or less after completing my degree program
④ 3 to 4 months after completing my degree program
⑤ 5 to 6 months after completing my degree program
⑥ 7 to 8 months after completing my degree program
⑦ More than 8 months after completing my degree program
⑧ I have not held employment since earning my doctoral degree

If you chose response 8 or if your first job is the same as your current job, skip to question 21.

Questions 13-20 are about your first, primary job after you earned your doctoral degree.

13. What was the name of your first employing organization?

____

14. What was your first job title?

____

15. Which category best describes your first employer? (Select only one)

① Business/Industry
② Elementary/Secondary School
③ Community College
④ Four-Year College or University
⑤ Federal Government Agency
⑥ State or Local Government Agency
⑦ Military
⑧ Hospital, Other Health-Related Facility
⑨ Other Non-Profit Organizations
⑩ Self-Employed
⑪ Other (please specify)
____

16. Which single category best describes your first job? (Select only one)

① Advertising/Public Relations Professional
② Computer Programmer/Analyst
③ Computer Software or Hardware Engineer
④ Educational Administrator/Counselor
⑤ Educator
⑥ Engineer
⑦ Engineering Technician
⑧ Executive/Administrator
⑨ Financial Services Professional
⑩ Health Care Professional
⑪ Mental Health Care Provider
⑫ Legal Services/Law Enforcement
⑬ Personnel Professional
⑭ Postdoctoral Fellow
⑮ Research Analyst/Research Assistant
⑯ Sales or Marketing Professional
⑰ Scientist, Life Sciences
⑱ Scientist, Physical Sciences
⑲ Scientist, Social Sciences/Policy Analyst
⑳ Statistician
㉑ Social Services Professional
㉒ Visual Artist/Performing Artist/Entertainer/Athlete
㉓ Writer/Journalist/Public Information Specialist
㉔ Nonprofessional (clerical, skilled craft worker, laborer, service worker)
㉕ Other (please specify)
____

17. How well did doctoral studies prepare you for your first job?

① Excellent preparation
② Good preparation
③ Adequate preparation
④ Inadequate preparation
⑤ Not applicable to my situation

18. To what extent was your first job related to your doctoral major or area of study?

① Directly related
② Somewhat related
③ Not related

19. If your first job was not related to your doctoral major or area of study, indicate the main reason (Select only one)

① Could not find job in major field
② Better pay in field in which employed
③ Better opportunity for advancement in field in which employed
④ Field in which employed appealed to me for other reasons
⑤ Did not want to work in major field
⑥ Other (specify) ________________________

20. Was a doctoral degree required in order to obtain your first job?

① Yes
② No

21. If I were to do it over, I would choose the same doctoral field again.

① Strongly Agree
② Agree
③ Uncertain
④ Disagree
⑤ Strongly Disagree

22. Have you published or presented original work in your major area since earning your doctorate? (Include works accepted for publication but not yet published, as well as co-authored work)

① Yes (Please answer Question 23)
② No (Please skip Question 23)

23. If the answer to the previous question was "Yes", what types of publications or presentations have you written or presented in the past three years? (Mark all that apply)

① Authored, co-authored, or edited books
② Sponsored exhibition(s) or public performances of creative work
③ Articles in professional journals or other refereed works, chapters in books, scholarly reviews
④ Non-refereed works, manuals, popular press works
⑤ Conference presentations, panel discussions

24. To what extent would the absence of financial support have influenced the completion of your doctoral degree?

① Would have made no difference in completion of degree, and would not have been a hardship
② Would have made no difference in completion of degree, but would have created financial hardship
③ Degree would have been delayed
④ Could not have completed the degree
⑤ I did not receive any financial support as a doctoral student

25. Were you a Maryland resident at the time you enrolled for doctoral study at our university?

① Yes
② No

What changes in your doctoral education at our university would have better prepared you for getting a job?

BEST COPY AVAILABLE

Thank you for completing this questionnaire. Please return it in the enclosed prepaid envelope.

☐○○○

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Printed in the U.S.A. (C1.F3) CP97-3888